August 1927

The MANUFACTURING CONFECTIONER

ublished by THE MANUFACTURING CONFECTIONER PUBLISHING CO., 30 N. La Salle St., Chicago, Ill.
Editorial Office, 39 Cortlandt St., New York City.

"Read wherever candy is manufactured"

There are corn syrups and corn syrups and a way of testing which ones are most adaptable to the manufacture of hard candies.

Hard Candy Edition

The PATHFINDER in the Gelatine Industry

DELFT GELATINE WORKS DELFT HOLLAND

A Certificate of ANALYSIS with every delivery

DELFT

The GELATINE that PROVES its QUALITY

At the National Confectioners' Exposition, Atlantic City, May 21-27, 1927

"Price is a relative term—Quality always a concrete fact"

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

Entered as Second-Class Matter October 24, 1922, at the Postoffice at Chicago, Illinois, under the Act of March 3, 1879. Published Monthly. Subscription Price $3.00 Annually.

A section of the air-conditioned packing room at the Belle Meade plant. The filled jars are restored to the corrugated reshipping cartons in which they came and these are in turn packed in stout wood cases as a further safeguard against breakage in transit.

(Courtesy of Glass Container Assn.)

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WHY FLAVOR YOUR HARD CANDIES?

SIMPLE! Without flavor they would only be pieces of colored sweetness, leaving with the consumer none of that pleasing taste which calls for **more.**

Good Flavors give distinction to Candy. Flavor is remembered—for better or for worse—long after the candy has been eaten and its appearance and chewing qualities have been forgotten. Bear this firmly in mind when selecting your flavors.

"Penny wise is pound foolish." Only a fraction of a cent per pound on the cost of your finished product is the difference between the "shot gun" flavor recommended for every purpose and suited to none, and one which is scientifically and aesthetically correct—designed to meet the special conditions of Hard Candy manufacture.

Our

HARD CANDY FLAVORS

are based on **true fruit extractives** for **naturalness,** fortified for **economy** and **strength,** fixed to **resist high temperatures** and **age.** They were made specifically to give better results in hard candy.

Uniform in price, strength and deliciousness of fresh fruit flavor quality, they are most convenient to use and to the nearly fifty different fruit, floral and special types now available new ones are constantly being added.

This group represents the greatest advance in the art of flavoring confectionery during the last twenty years. It is in successful use by a majority of the largest nationally known manufacturers throughout the United States and Canada. When you make better hard candies you will be using these flavors.

Samples and information are yours for the asking.

FRITZSCHE BROTHERS, INC.

"A FLAVOR FOR EVERY PURPOSE"

82 Beekman Street
NEW YORK

118 West Ohio Street
CHICAGO

TORONTO
Fritzsche Brothers of Canada, Ltd.
93 Church Street

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The Manufacturing Confectioner's Approved Advertising of

Confectioners' Machinery and Supplies

and Miscellaneous Advertising Directed to Manufacturing Confectioners

POLICY: THE MANUFACTURING CONFECTIONER *is essentially a manufacturers' publication and therefore is a logical advertising medium only for confectioners' supplies and equipment. The advertising pages of* THE MANUFACTURING CONFECTIONER *are open only for messages regarding reputable products or propositions of which the manufacturers of confectionery and chocolate are logical buyers.*

This policy EXCLUDES advertising directed to the distributors of confectionery, the soda fountain and ice cream trade. The advertisements in THE MANUFACTURING CONFECTIONER *are presented herewith with our recommendation. The machinery equipment and supplies advertised in this magazine, to the best of our knowledge, possess merit worthy of your careful consideration.*

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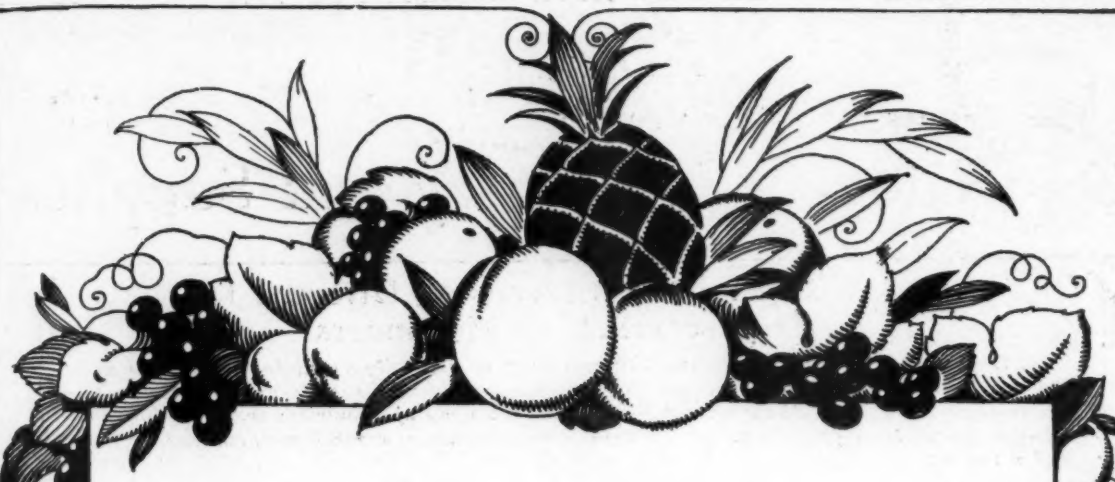


Unco Simile

Fruit Flavors

(IMITATION)

Natural fruit flavors are impractical and unsatisfactory for use in many confections since, whatever their delicacy of flavor, they lack strength and do not impart their character to the finished product unless fortified in some way. For the candy maker their place is admirably filled by

Unco Simile Fruit Flavors

These valuable materials are as close to nature in flavor as expert attention and long experience can make them and have the additional merit of high concentration.

To employ them is to insure economy in manufacturing costs and satisfaction in results.

UNGERER & CO.

124 West 19th Street NEW YORK

Ever try rolling your Peanut Butter Center goods in Toasted Coconut?

A Most Delicious Eating Combination

BAKER'S
GOLDEN TOASTED COCONUT

seems to give just the ideal flavor blend especially in pulled goods and honeycomb work with Peanut Butter Center.

May we send generous sample to try out?

There's a fascination about its rich, golden, tasty appearance that candy folks can't resist — there's quality supreme in every shred.

SEND FOR SAMPLES

We will gladly send experimental samples. You'll find them chock full of ideas for new, quick sellers. Tell us you want them, no obligation whatever.

BAKERS COCONUT
TOASTED
MACAROON
NET WEIGHT
10S LBS.
Franklin Baker Co.

The Economy Nutmeat"

Franklin Baker Company

Hoboken, New Jersey

Canadian Address
Franklin Baker Ltd., 20 Bates Road, Outremont, Montreal

It is not fair to the future of your organization to use "bargain" lots of **Toasted Coconut,** or attempt the preparation of **"Toasted"** in your own plant from Imported Coconut.

Golden Toasted Coconut is a specialty topping prepared by the makers of Gem Imported Coconut.

THE BEST HARD CANDY

The best hard candy is all-sugar and the simplest way to make it is with the use of Nulomoline as the "doctor".

Nulomoline takes the "hit or miss" out of all-sugar hard candy production because it gives the most perfect grain control.

The method of using it is simple and any kind of cooking device can be used.

We will supply formulas
and other helps.
Write us.

The NULOMOLINE Co.

109-111 Wall Street New York, N. Y.

"isolate"

—the Newest Sales Weapon for YOU or YOUR COMPETITOR

ONE of the greatest achievements in the evolution of flavor has just recently become an accomplished fact.

A new standard of flavor excellence has been set. New extremes of economy have been established. New uniformity of strength and new certainty of maximum flavor appeal are assured.

By an exclusive new process, the culmination of 42 years of concentrating on a single problem, we have succeeded in isolating the desirable characteristics of choicest tree ripened citrus fruits—liberating this perfectly delectable essence from all elements which in natural fruit cause decay and in fruit juices or other extracts now offered cause bitterness, harshness and other evidences of deterioration.

To you and all manufacturers who take advantage of the benefits of science as they are presented, we offer the surest way to attain Flavor Supremacy with your product—we offer you the most delicious, most concentrated, most uniform, most convenient to use, and most economical citrus flavors in existence—the ISOLATES.

Test out ISOLATE Orange and ISOLATE Lemon at once. Standardize upon them in your production. Capitalize upon them in your selling. Benefit from them in your profits.

Order Trial Gallons Sent Prepaid Today

Since giving "Original Terpeneless Citrus Concentrates" to the trade back in 1885 we have perfected a full line of other super-extracts ideally fitted for each flavor use. Our entire capital, personnel and laboratories are devoted to the manufacture of SOLUBLE concentrates. We maintain a modern research department for solving your flavor problems. Consider the Foote & Jenks representative in his true capacity—a Service-man eager and able to assist you.

FOOTE & JENKS

Flavor Specialists

JACKSON, MICHIGAN

At Last!
A Real Butter Flavor

Butter Bouquet

Not a mixture of Butric Acid, Ethers or Esters, but a PURE Butter Flavor containing the flavoring constituents found by analysis in Butter.

One ounce is equal in flavoring strength to one pound of Creamery Butter. Guaranteed against rancidity.

Used in Hard Goods, Cream Centers, Fudges, Caramels.

Other Bouquets:

Cherry, Tame
Cherry, Wild
Cocoanut
Grape
Hazelnut
Honey
Peach
Pineapple
Walnut, English
Raspberry
Rum Punch
Strawberry
Walnut, Black

Let us ship you, postpaid, a trial pint of any or all flavors, on approval.

SETHNESS COMPANY

659 Hobbie Street
Chicago

1133 Broadway
New York

IMPROVE YOUR LIQUID CENTERS

By the use of Convertit you make sure of the liquefaction of your fruit-cream centers.

Convertit permits the use of higher melting temperatures thereby making the centers easier to handle.

Convertit enables you to soften your centers to any desired degree of consistency.

OUR BOOKLET TELLS HOW.

WRITE US.

WHAT CONVERTIT IS

CONVERTIT is a yeast enzyme known as invertase. It is a practically colorless liquid. It comes packed in bottles or steel drums. The great value of CONVERTIT lies in its power to soften cream centers after they are coated with chocolate. Our booklet covers in detail the use of CONVERTIT under actual factory conditions.

Invertase has also been the subject of long study and research by the Bureau of Chemistry at Washington, D. C. and it is now fully recognized as a valuable scientific contribution to the candy industry—an outstanding example of the benefits to be derived from the cooperation of chemists and candy makers.

CONFECTIONERS' EDUCATIONAL ADVERTISING Contributor

THE NULOMOLINE COMPANY

Exclusive Distributors of Convertit

109-111 Wall Street **New York, N. Y.**

CONVERTIT

The highly concentrated invertase of standardized activity

Staley's
PRODUCTS FROM CORN

Improved Crystal Corn Syrup

Highly Perfected for Hard Candy

CORN SYRUP is the perfect "Doctor." Not only from the aspect of its economy but because it can be used in predetermined amounts with certainty of results.

Correct gravity as reported in degrees Baume—low acidity as measured by its pH value of between five and one-half and six—a completely refined product that does not foam or stick to the kettle—and last, but not least—a clear water white crystal color which will not show perceptible discoloration when cooked to 320° F. under actual candy test in conjunction with sugar.

This is only part of the story of Staley's Improved Crystal Corn Syrup. The uniformity and quality of our Syrup is held constant by rigid and thorough inspection, and is backed by our organization which is imbued with this spirit of quality, friendliness and fair dealing.

Our Laboratories and Technical Research Departments are at your service. A letter from you will bring the complete story of Staley's Improved Crystal Corn Syrup and an offer of genuine service.

STALEY SALES CORPORATION

Decatur □ **Illinois**

THESE SILENT SALESMEN HAVE BEEN PROFITABLE

One of the tallest buildings in the world was built on profits from 5 and 10 cent sales.

Quick sales—rapid turnover—accomplished by making it easy for the public to buy.

Making it easy to buy—that is the answer—and we have solved the problem with our Silent Salesmen Display Containers. We design them distinctively and individually for each product.

Our displays will place your goods directly before the buyer—NOT IN the show case but ON TOP of it. The price is marked—no questions need be asked. The buyer puts down the money and helps himself.

Any of our salesmen will tell you how U. S. Displays have speeded up sales and made money for our Customers.

WRITE US FOR PARTICULARS

The United States Printing & Lithograph Co.

Color Printing Headquarters

65 BEECH ST.

CINCINNATI, OHIO

Pack Hard Candy and Chocola

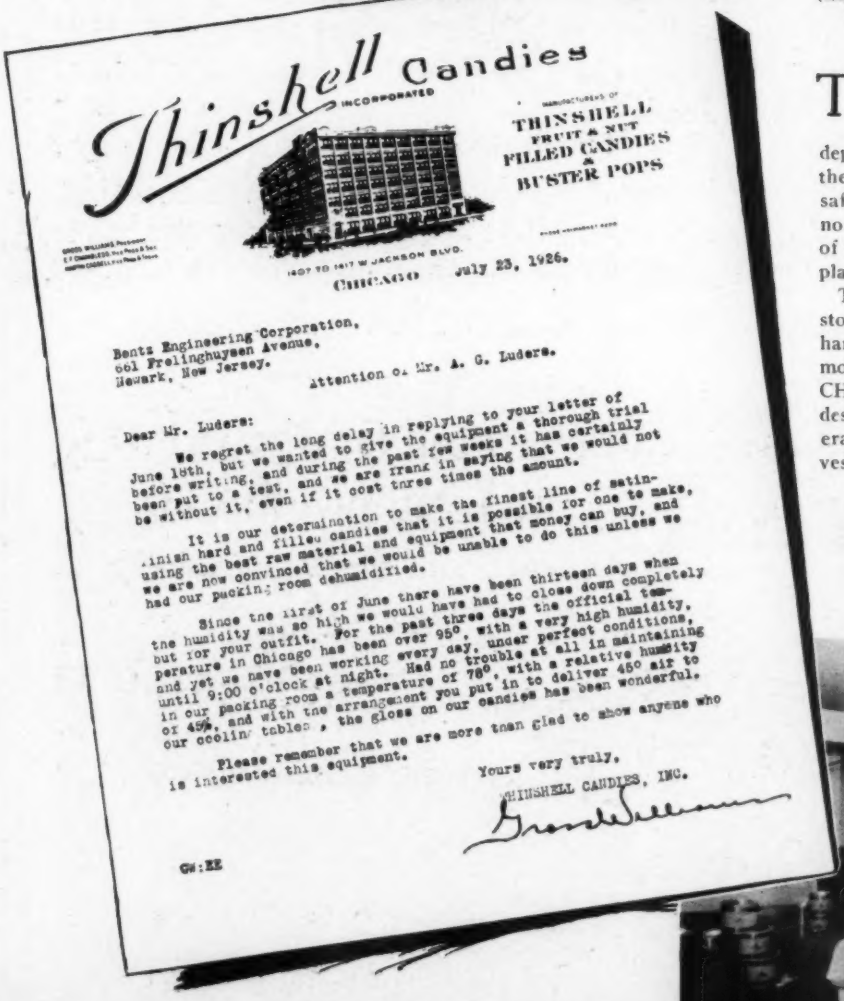
The following want ad "pulled" applications from the best hard candy makers in the Chicago territory, because the position assured steady work, made possible by a properly equipped factory.

Tribune. FINAL

CANDY MAKERS.

Must be experienced on spinning satin finish hard and filled candies; steady work; plenty of overtime; no layoff acct. weather. We manufacture our own. Thinshell Candies. Inc., 1407 W. Jackson-blvd.

(Reproduced and enlarged from the Help Wanted Section of the Chicago Tribune, issue of August 13, 1926.)


Thinshell Candies

INCORPORATED

MANUFACTURERS OF
THINSHELL
FRUIT & NUT
FILLED CANDIES
&
BUSTER POPS

1407 TO 1417 W. JACKSON BLVD.

CHICAGO July 23, 1926.

Bentz Engineering Corporation,
661 Frelinghuysen Avenue,
Newark, New Jersey.

Attention of Mr. A. G. Luders.

Dear Mr. Luders:

We regret the long delay in replying to your letter of June 15th, but we wanted to give the equipment a thorough trial before writing, and during the past few weeks it has certainly been put to a test, and we are frank in saying that we would not be without it, even if it cost three times the amount.

It is our determination to make the finest line of satinfinish hard and filled candies that it is possible for one to make, using the best raw material and equipment that money can buy, and we are now convinced that we would be unable to do this unless we had our packing room dehumidified.

Since the first of June there have been thirteen days when the humidity was so high we would have had to close down completely but for your outfit. For the past three days the official temperature in Chicago has been over 95°, with a very high humidity, and yet we have been working every day, under perfect conditions, until 9:00 o'clock at night. Had no trouble at all in maintaining in our packing room a temperature of 78°, with a relative humidity of 45%, and with the arrangement you put in to deliver 45° air to our cooling tables, the gloss on our candies has been wonderful.

Please remember that we are more than glad to show anyone who is interested this equipment.

Yours very truly,

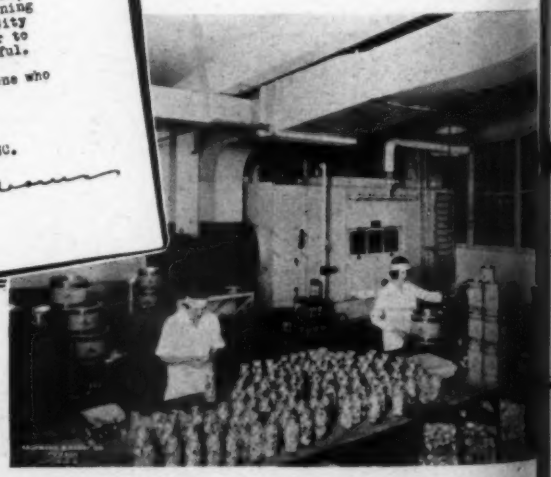
THINSHELL CANDIES, INC.

GW:EE

THERE were only 5 days during the month of August, last year, when the weather was right for operating the hard candy department. Even in the bright, sunny days the atmosphere was too humid to permit the safe packing of hard goods, but there were no shutdowns at the Thinshell factory—one of the largest and finest equipped hard candy plants in the United States.

The letter reproduced herewith tells the story of ideal manufacturing conditions for a hard candy department. The fact that this modern air conditioning equipment (Bentz CHILLBLAST), attracts and holds the most desirable class of skilled help is a big consideration in itself toward justifying the investment in Bentz Engineering Service.

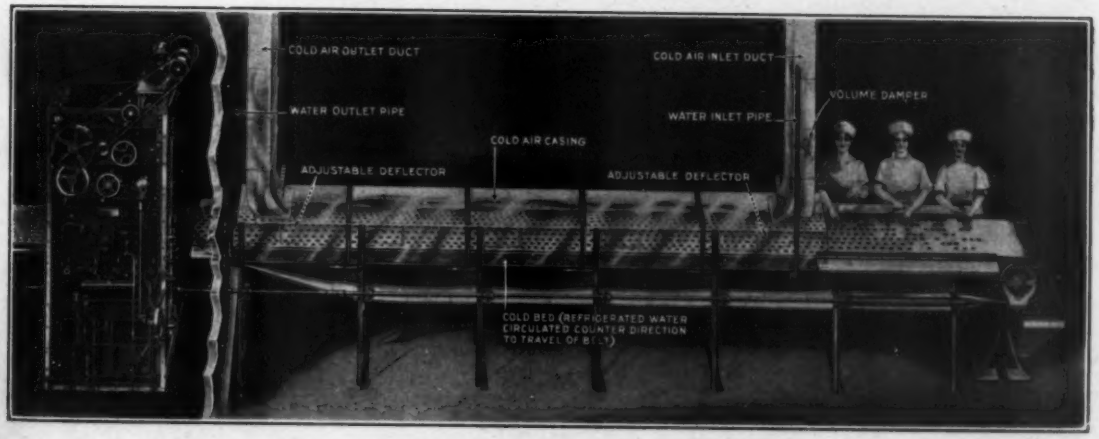
Bentz Engineers will give you counsel and make an impartial survey of your conditions and submit plans and estimate, without obligating you in the least. Let us hear from you, please.



Packing Room at Thinshell Candies, Inc., showing the Bentz CHILLBLAST Air Conditioning Unit in Background.

Goods in Weather Like This ?!!!

Manufacturing Under Adverse Weather Conditions



The Bentz "COLDBED" directly connected to coating machine

FIVE HUNDRED IN USE

BENTZ ENGINEERING CORPORATION

661 Frelinghuysen Ave., Newark, N. J.

New York: 122 Greenwich St. **Builders Building, Chicago**

Get Ready--
This Will Increase Your Sales!

HERE are some of the phenomenal sales increases experienced by those who have properly observed Sweetest Day. One company, who has tied up with Sweetest Day for the past five years, reports the following increases each year compared with the first Saturday in October: 256% increase, 369% increase, 339% increase, 449% increase and last year, 571% increase. They state further that Sweetest Day business is about 20% larger than Valentine's Day business, 15% larger than Easter, 30% larger than Mother's Day.

Other companies reported as follows: One that Sweetest Day business was 467% greater than the sales of the first Saturday in October; another, 350% increase over the average Saturday; another, 175% increase, another, 500%; another, 400%, and all state that each year the sales are ahead of the previous Sweetest Day; that is—each year, sales grow as the day gets better established.

Experience has proven that every kind of candy sells Sweetest Day, helping manufacturers, jobbers and every kind of retailer alike. For example, thirty retail druggists reported 200% increase over a normal Saturday.

Big National Advertising

Sweetest Day will be nationally advertised this year for the first time in its history. Full color page in the September 17th issue of the Saturday Evening Post, circulation over 2,700,000; full color page in the American magazine, October issue out September 20th, circulation over 2,100,000; full color page in Liberty, out October 3rd, circulation over 1,200,000, a total of over six million circulation, much of it in your own community.

When Is Sweetest Day?

The Second Saturday in October —Saturday, October 8th.

What Is Sweetest Day?

For the consumer, Sweetest Day is a day set aside for the appreciation and expression of kind thoughts and acts—a day on which to make somebody happy. For retailers, jobbers and manufacturers, it is all this and the opening of the Fall candy season as well—a time for retailers to clean up their stores, counters and windows, rearrange candies to display and sell fresh stock and by window displays and store advertising to tie up and cash in on the national advertising of Sweetest Day.

Local Sweetest Day Committees

To get the best results, each community should have a Sweetest Day Committee with a general Chairman and duties of subcommittees as follows:

1 Finance.
2 Paid promotion secretary and manager.
3 Committee on advertising publicity.
4 Committee on gifts to charity.

A Complete and detailed Sweetest Day booklet is available for local committees if they will write the address given below.

Manufacturers should be sure that their salesmen are advised of this Sweetest Day information to give their customers.

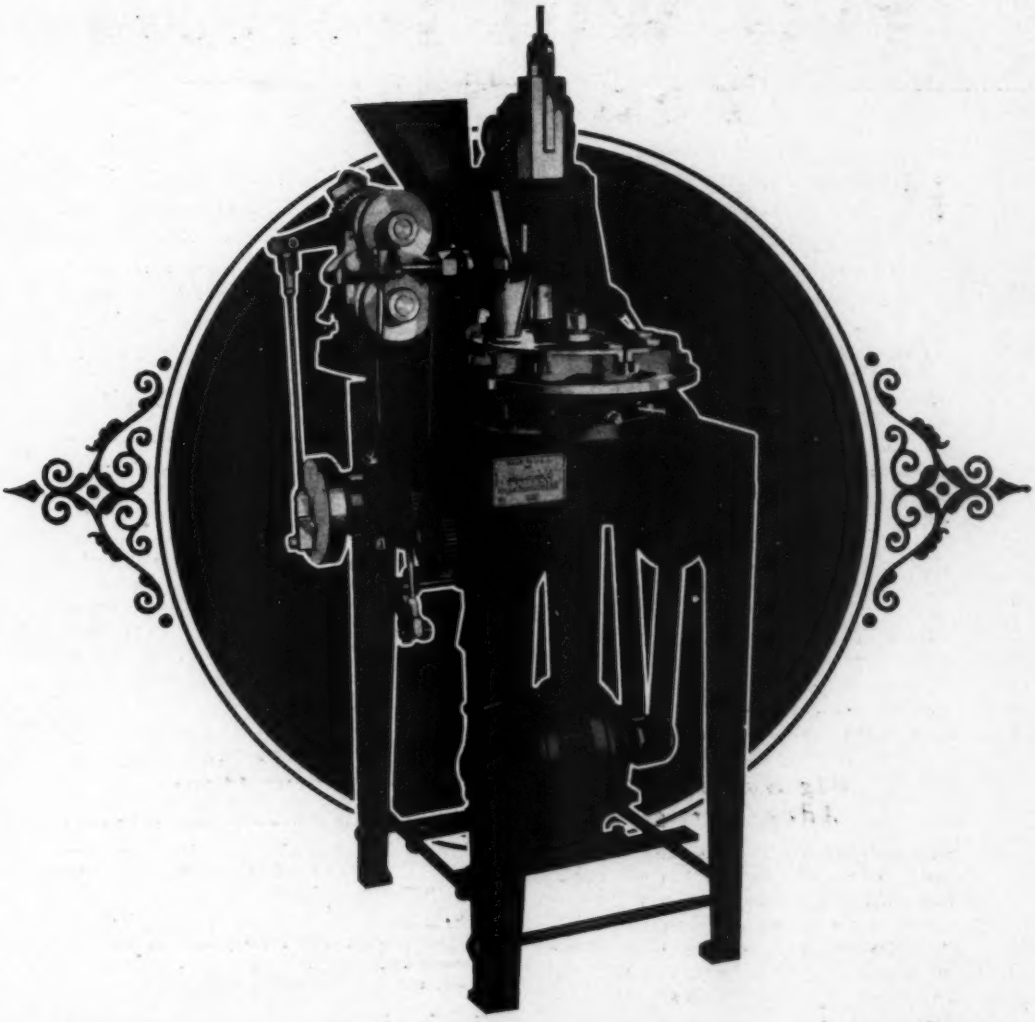
CONFECTIONERS' EDUCATIONAL ADVERTISING
Contributor

SWEETEST DAY PROMOTION DEPARTMENT A.
NATIONAL CONFECTIONERS' ASSOCIATION,
1627 LOCUST STREET, SAINT LOUIS, MO.

RACINE
CONFECTIONERS MACHINERY

Model "M" Racine Sucker Machine

(PATENTED)



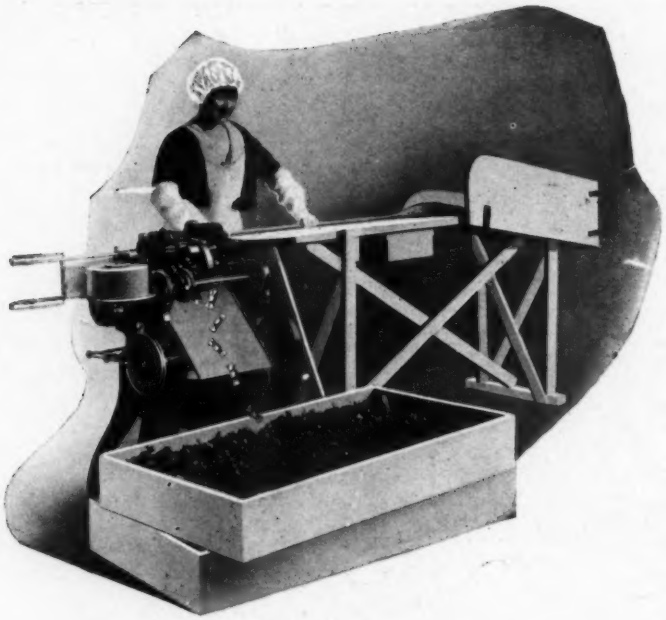
The products of the Model "M" are among the best selling suckers on the market today. They include the base ball, foot ball, golf ball, golf club, flat oval "pops" with embossed names or figures, as well as many other designs which are popular and attractive.

In this machine the suckers are formed in dies under pressure, are perfectly shaped and have smooth, straight edges.

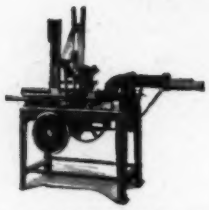
Because of the rapidly increasing demand for the class of goods made by the Model "M" it should have a place in every factory where suckers or hard goods are made.

RACINE CONFECTIONERS' MACHINERY COMPANY

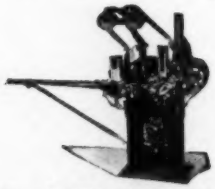
RACINE, WISCONSIN, U. S. A.



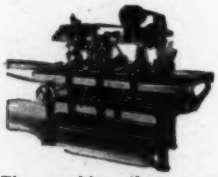
Making Money in Kisses



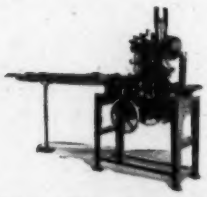
The machine that wraps cigarette and other small packages in transparent glassine paper — 65 per minute.



The machine that wraps Chewing Gum complete — 500 sticks per minute.



The machine that wraps chocolate bars in inner and outer wrapper — 65 per minute.



The machine that wraps small cartons in printed or plain wrappers — 90 per minute.

THE secret of making money in the candy kiss business is shown at the top of this page. The machine you see there produces 100 pounds of kisses per hour at a saving of 2 cents per pound over hand wrapping.

Starting with only one machine, you are immediately in position to build up a business of large volume. Your investment is small. You need little or no increase in your factory facilities. You have no labor problem—the model K does the work of 8 to 10 hand wrappers, and requires only one operator.

YOUR MARKET IS BIG. Every class of people buy kisses. They are an all-year 'round seller. The kiss business quickly develops into large volume. Most concerns which began with only one machine, now have 10 to 30 machines in operation.

We are in close touch with conditions in the candy field. Our machines are used by leading manufacturers of chocolate bars, chewing gum, mint tablets, stick candy, etc. It will pay you to let us give you all the facts about the candy kiss business. Write to our nearest office.

PACKAGE MACHINERY CO.

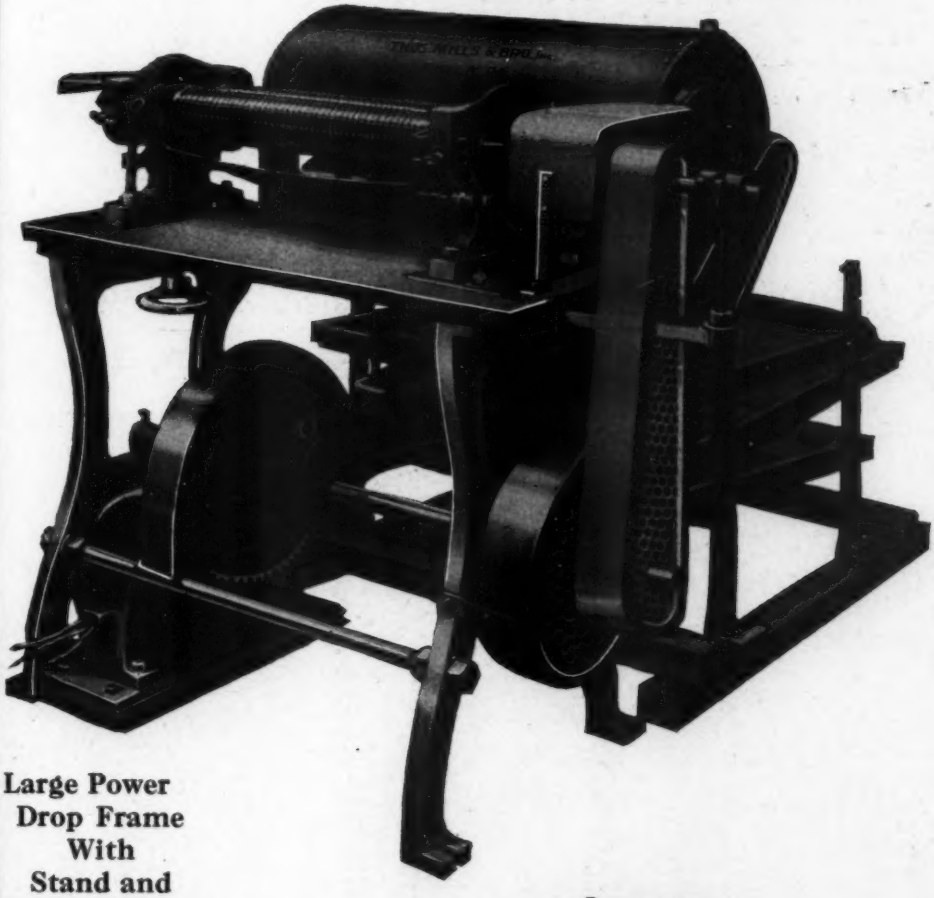
SPRINGFIELD, MASSACHUSETTS

NEW YORK: 30 CHURCH ST CHICAGO: 111 W. WASHINGTON ST.

Thomas Mills & Bro., Inc.

1301 to 1315 North Eighth St. **Philadelphia, Pa.**

ESTABLISHED 1864



Patent Automatic Seamless Hard Candy Machine

—o—

Improve Your Production By Installing This Labor Saving Machine

Send for Special Circular

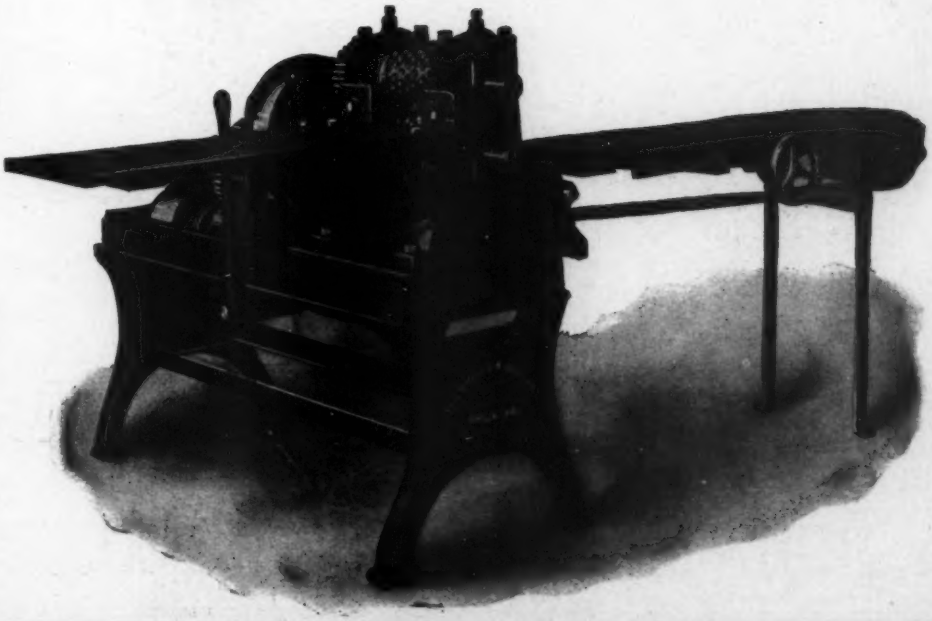
Large Power Drop Frame With Stand and Endless Belt Conveyor Attachments

—o—

Used In All The Largest Factories For High Grade Hard Candies

—o—

Our Catalog of Confectioners Equipment Sent on Request



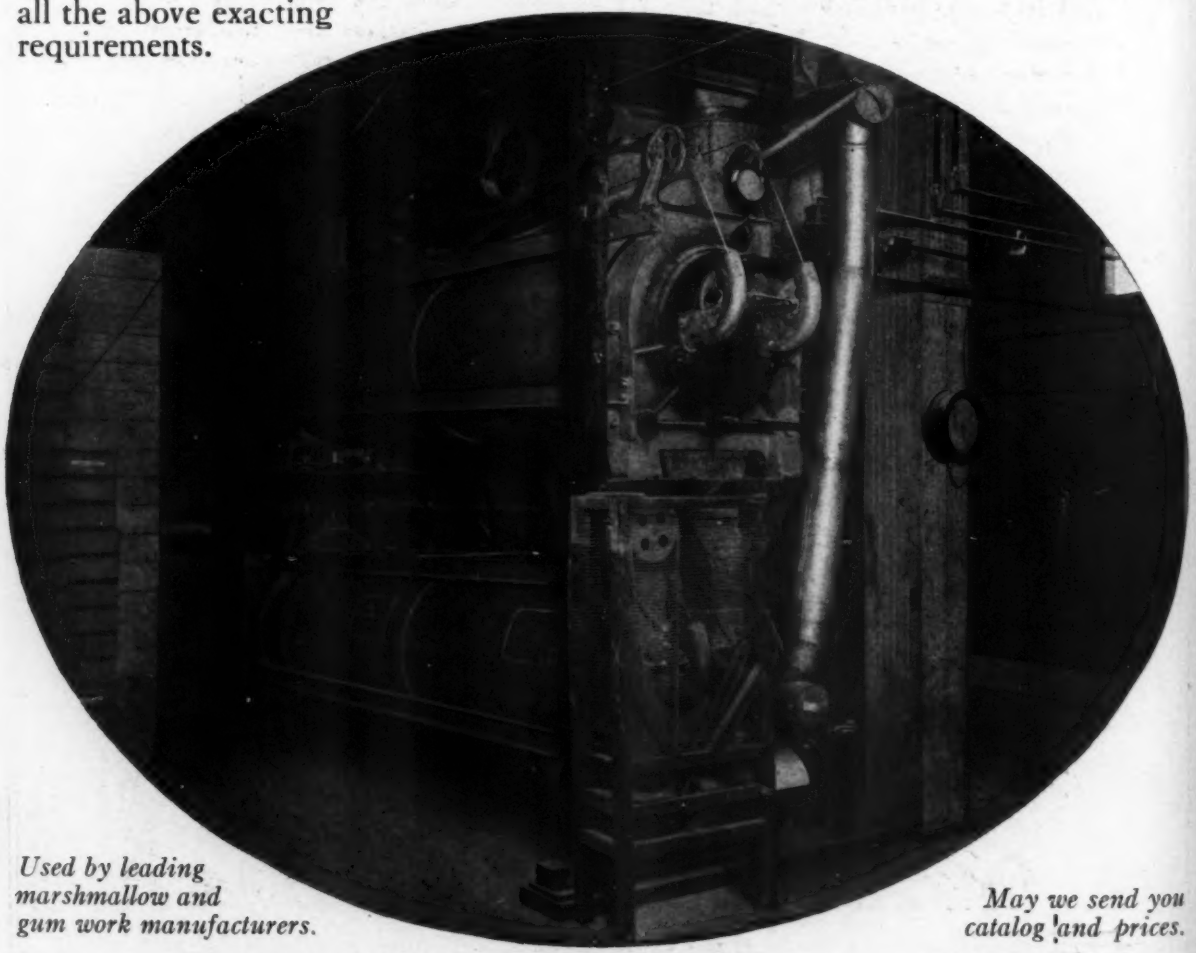
The Ideal Equipment for
STARCH DRYING:

as outlined in recent scientific article by Carey P. McCord, M. D., a leading bacteriologist.

"The Ideal Equipment for this purpose (Starch Drying) would have among its capacities the following:

1. *The automatic and dust-proof carriage of starch from the starch board dumping machine to the stacrh board filling machine; dehumidification of the starch taking place during transit.*
2. *Dehumidification of starch to usable percentages by continuous process at such a rate as not to involve storage.*
3. *Screening and separation of all materials larger than the usual starch granule.*
4. *Such compactness as to size and such freedom from heat, noise, etc., as not to make the machine objectionable in the factory*
5. *Disinfection and disinfestation of the starch to the end that the dried, renovated starch may be free of harmful bacteria, molds, and vermin.*

The Huhn Continuous Starch Drying and Conditioning System comforms to all the above exacting requirements.



Used by leading marshmallow and gum work manufacturers.

May we send you catalog and prices.

A. HUHN MANUFACTURING CO.,

3915 Hiawatha Ave. Minneapolis, Minn.

The Desirable Gloss on Hard Candies

A Problem *of* Air Conditioning

WHEN the experienced candy manufacturer examines hard candy, either from his own plant or his competitor's, and finds the individual pieces beautifully glossy and free from stickiness, he knows that the manufacturing and packing has been done only within a dry, non-humid atmosphere. He knows, too, that natural weather conditions permit the successful production of this type of goods for only brief and uncertain periods during the Winter months.

There are, however, factories which are entirely independent of the weather,—factories which are enabled through *Manufactured Weather* to maintain a uniform schedule of hard candy production and packing throughout the year regardless of the season or the weather. These factories are Carrier Conditioned; equipped to automatically create and maintain the conditions of temperature and humidity best suited to the product being made. We number among these some of the finest and largest candy factories in the country and particularly those producing the highest grade of hard candies on the market, for example: **Bunte Bros., S. F. Whiteman & Sons, Luden, Inc., Beechnut Packing Co., The Nunally Company, Belle Meade Sweets.**

If you have already a surplus of refrigeration it would not be an expensive proposition to have our engineers design and install equipment to condition the hard candy department in your plant, thus enabling you to add this profitable line to your products or to improve your present quality and schedule of production.

If your refrigeration is insufficient there is the new, compact Carrier Centrifugal Refrigeration unit, using a harmless, inoffensive liquid as a refrigerant, which could be installed in your plant in connection with an air conditioning system for all departments.

The finest candy factories in the world are Carrier Conditioned

Write the details of your problem
Ask for a visit from one of our Engineers

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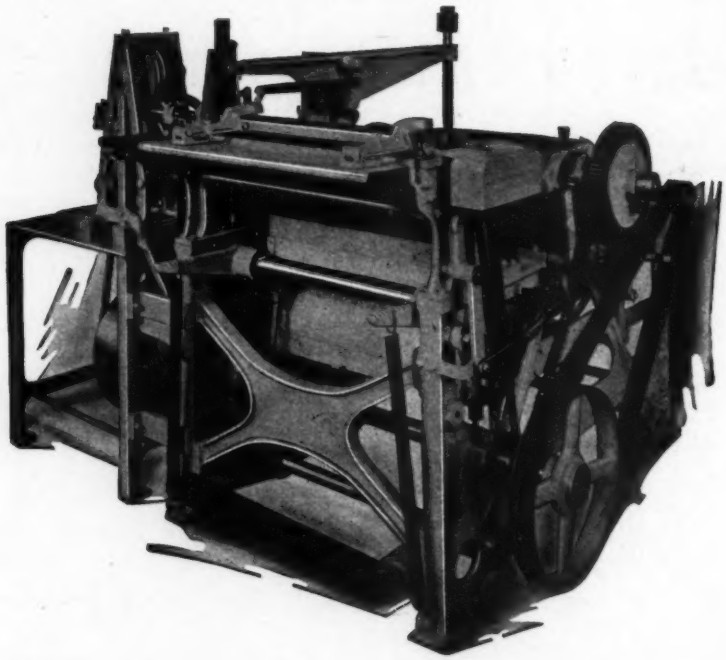
The AUTOMATIC HARD CANDY MACHINE *for* SPHERICAL HARD GOODS



This machine embodies in it all the features of the Semi-Automatic Machine plus the added convenience of Sizing, Feeding, Cutting and Discharging, ***entirely automatically***

IT SAVES LABOR
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Hard Candy Producers:

Special provisions are also made for producing the now famous fruit tablets on this machine. It merits your consideration. Write us.

Full information on request — Do it now!

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New York Office: Alamac Hotel.

MODERNIZE your HARD CANDY Department

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PLASTIC CANDY MAKER

1. It gives **greater production** than any other Plastic candy machine.
2. **Less Labor** is required to operate it.
3. It produces **better formed pieces.**
4. All pieces are **perfectly cut off and sealed.**
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6. It has larger, **stronger working parts.**
7. It is **American** designed, manufactured and serviced and **especially adapted** to conditions which are found in **American factories.**
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You too ***must have one*** *if you meet his low production cost.*
Wire for complete information.

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First Producers of Certified Colors

ATLAS CERTIFIED COLORS — scientifically prepared to meet the needs of the highest type of confectioners and for every purpose in the confectionery industry — particularly for plastic and clear hard candy work.

Uniformity

Purity

Strength

Solubility

Food Color Headquarters for Fifty Years

FIFTY YEARS AGO WE PRODUCED THE FIRST HARMLESS FOOD COLORS used in the United States (after long study by experts of their physiological effects—the first and only work of this kind ever undertaken on coal-tar colors), and after establishing their harmlessness for food, every batch was tested before being distributed. This was 30 years before certified colors came into use, of which we were the FIRST PRODUCERS. We have never yet failed to prove any official wrong who claimed to find objectionable colors in our customer's goods. No manufacturer ever suffered through the use of them. We were largely instrumental in halting opposition of important officials when the present Food and Drug Act was before Congress, who would have forbidden all food coloring if they could.

COLORS FOR PLASTIC WORK

Atlas Cert. New Rose
" " Marseline Orange
" " C. D. M. Green
" " Mauvine
" " 514 Brown

and many others, which will produce those beautiful and delicate shades of nature.

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The Progressive Manufacturer can only establish a quality product by using the best material; there are no ingredients in which confidence in the producer is so absolutely necessary or important as in Colors and Flavors. **Our 75 years of business experience is a guarantee of quality products, and a sound basis for your confidence.**

GENUINE FRUIT EXTRACTS

Our Genuine Fruit Extracts are not only so-called, but the **product of the actual fruit whose name they bear.**

The production processes are by special apparatus and methods which retain and preserve all the finest and most delicate esters and aromas of the **finest selected fully ripe fruit picked where the most lucious of its kind is grown.**

We shall be glad to have an order for pint samples and suggest our **wonderful Genuine Fruit Strawberry and Raspberry Extracts.**

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Established 1851

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Factory:
537-555 Columbia St., Brooklyn, N. Y.

83-93 Park Place
NEW YORK, N. Y.

EDITORIAL

ROBERT RANDOLPH, EDITOR

Hard Candy Edition

AND NOW comes a pause in the year's work to take stock of our accomplishments in the field of hard candy.

We are at the threshold of a new consuming season. Judging from all the known barometers, the demand for hard candies will be bigger and better than last year's.

Whether we will make a satisfactory profit on that business depends largely upon how efficient we are, how we have kept up with the times. And so we are in the midst of our *Fall Hard Candy "Conference."*

As with our issue of last January, we aim to present to you the developments in hard candy research, the most up-to-date methods of handling raw materials, the newest ideas in cutting costs and producing profits where only volume grew before.

Glance through the table of contents and note how these articles conform to the everyday problems of your own hard candy business. An old friend, Cliff Clay, talks on "water" as a raw material in hard candy. Here also you will find "40 Centuries in Quest of Hard Candy" by O. H. Keen, a practical engineer. This is the beginning of a highly interesting series on the history of candy, candy raw materials and candy making methods and equipment. Your advertising department will "eat this up" if it is looking for new copy. An Englishman discusses "High-boiled Sweets," and the U. S. Chamber of Commerce tells us what they think of the "Candy Muddle."

Then our own survey of the quality of competitive corn syrups—but there is no need to go on. Turn to page 28. This is your moment of participation in our *Fall Hard Candy Conference.* Go to it, and then write us about any angle of this subject which you would like to see discussed further in subsequent issues. We like to have your criticisms and suggestions which will make our editorial program of greatest usefulness to you and the manufacturing fraternity of this industry as a whole.

Who Cut the Price of Hard Candy?

A FEW short weeks and our boy Johnny goes back to school. Mother—she starts to make up the Christmas shopping list, and dad—well, he just loads up on sugar and waits for the fall hard candy demand to set in.

Fall, when the neck-tie houses halve the lengths and double the profits; fall, when the "Clearance" sales are done; fall, when the butcher, the baker and candlestick maker even up the summer scores by doubling up the profits; fall, when the department store managers lie awake nights thinking up new ways to make a hard-earned dollar look like "only 98 cents"; fall, when every trade and every store in the whole wide world prepares to take a "fall" out of dad, and dad — well, he just makes a few unintelligible grunts about business being rotten and "beats the crowd to it" by cutting the price of hard candy.

Winter, when the money-spending orgy is over, we hold our sales conventions. Without doubt at one of these winter sales conferences someone will arise between "resolves" to add "who is this fellow who cuts the price of hard candy the same time every year? Who is this aching void who at the first sign of an awakening market grabs at volume and lets the profits slide!" Ask dad, he knows.

E. R. ALLURED, Publisher ROBERT RANDOLPH, Editor

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If the Shoe Fits

IN our June issue we printed an editorial entitled "Narrowing the Breach." Attempting to disabuse the manufacturer's mind of the bogey of chain store competition, we pointed out, among other things, that the chain's only advantage over the wholesale manufacturer lay in the elimination of the *unprogressive* middleman, whose services they felt they themselves could perform more efficiently.

Our suggestion to eliminate those jobbers who perform no real service to the industry, and many of whom have already been dropped by such sagacious leaders as our N. C. A. president, Mr. Wm. F. Heide, with his sensible policy of selective jobbing distribution, evoked not a single protest from our own subscribers, who are far too level-headed to assume that a criticism of a certain class of parasitic and undesirable jobbers, constituted an indictment of the whole jobbing trade.

Naturally, there are manufacturers for whom direct-to-the-retailer merchandising is neither practicable nor desirable. These firms will continue to be represented by jobbers or regularly accredited selling agents. We have no fault to find with this system.

It is evident to others besides Mr. Heide that the jobber must be reckoned with as a tangible part of their own selling forces. Consequently, he must perform certain legitimate sales promotion functions, being ever on the alert to render to the manufacturer that aggressive and intelligent service which alone justifies his existence in the competitive and highly organized markets of today.

Mr. J. M. Clark, secretary of the Southern Wholesale Confectioners Association, has this to say to us in a letter on the subject dated June 23rd, 1927, reprinted herewith by permission:

> **"Manufacturers have a number of kicks coming in regard to their channels of distribution. Undoubtedly the jobber as a class is not everything that could be desired as a distributor for the manufacturer."***

Mr. Clark is under no delusions concerning the jobber "as a class." And so, because he discriminates between the "sullen, bellicose and often illiterate jobber" referred to in our editorial, and the wide-awake distributor who is a legitimate link in the modern merchandising economy, we are with him. The jobber, too, if he subscribes to the high ideals and business ethics of such organizations as the Southern Wholesale Confectioners' Association, and lives up to them, is "*narrowing the breach.*"

*(The entire context of Mr. Clark's message to the manufacturer is printed elsewhere in this issue.)

A Publisher's Dilemma

When the jobber serves the manufacturer faithfully and well he deserves our respect, not our allegiance. In this we differ perhaps from our chamelion-like contemporary whose ludicrous attempts to serve by specialized publications first the jobber, then the manufacturer, then the retail distributor—using the slogan "don't make candy, sell it," then just the opposite—the retail candy shops, then both jobber and manufacturer—have earned for him the distrust of all.

This time, it is the indifferent jobber with the invigorating motto "bigger and cheaper" whom our contemporary, publisher of "Candy," in his August editorial, has endeavored to flatter and defend. This gentleman furiously resents any disparagement to one of the least of these, his subscribers.

He flatters our publication by devoting over half of his August editorial columns to a diatribe *appropriately* entitled "Brain Fever," in which he indulges himself in a lot of cheap humor more suited to the comic strips of the tabloid newspapers, from which his style is apparently derived.

After making his readers feel perfectly at home with a few "wots" and "oughttas," he launches into a bitter vituperative tirade against our editorial, from which he quotes carefully selected sentences which naturally sound a little different when lifted from the main body of the text.

If it is really as this editor says, "Plainly we get the impression from the editorial remarks reproduced, that all candy jobbers are a scurvy lot of knaves for whom nothing can be hoped in this world or the next," we can only pity his lack of comprehension. But we suspect that like many of his ilk, destructive criticism of a contemporary which could be composed without stirring out of his comfortable chair, merely proved a godsend in the way of easy filler. Constructive editorials requiring thought and sometimes independent investigation, are much more difficult.

Having satisfied himself with thus tilting at his windmill, this modern Don Quixote concludes his editorial with this subtle (?) bid for jobber favor:

> "We have long cherished the friendship and esteem of a host of charming manufacturers and jobbers, whom we have, in our way, considered to be a gentlemanly and interesting group and in all ways worth knowing."

Selah . . . .

A Message from the S. W. C. A.

Mr. Earl Allured,
New York, N. Y.
Dear Mr. Allured:

Your letter of June 21st is greatly appreciated. About using your paper for a message to the manufacturers, I am at a considerable loss as to what to say. Manufacturers have been talked to and talked at, and have heard so much rot that it it quite a difficult problem to dope out a message to them that will receive their attention and favorable consideration.

I will say a few things in this letter which you may adapt for publication if you think well, or forget it if you think best.

Manufacturers have a number of kicks coming in regard to their channels of distribution. Undoubtedly the jobber as a class is not everything that could be desired as a distributor for the manufacturer.

On the other hand, the policies of some manufacturers are such that there is no encouragement of efforts to improve their channels of distribution. Some manufacturers seem to disregard everything but their own interests of the immediate moment. In some cases it seems that this policy works out very well for the manufacturer.

Other manufacturers attempt to make use of policies which will improve conditions among their jobbers and suffer loss for the moment. Whether their constructive efforts will pay them dividends in the future is a question which can be answered only after the trial period. We are of the opinion that the candy business of today is very much like conditions which led the country storekeeper to tell the travelers calling at his place that they would have good neighbors in the new country to which they were going, or bad neighbors, depending on whether they told him they had left good neighbors at their old home. Those who had left good neighbors would find good neighbors, and those who complained of their old section were told that they could expect to find no neighbors worth while where they were going.

Good manufacturers and *good* jobbers could well afford to invest something to make permanent their relations, and make those relations mutually profitable in greater degree.

If you think any of these thoughts are worth passing along to the manufacturers I would be glad for you to use them.

Yours very truly,
J. M. CLARK,
Secretary.

What d' you Know?

Monthly Questions About Practical Candy Making, Buying Supplies, Etc.

Questions for the Factory Superintendent

1. **What is the accepted candy test for corn syrup?**
   (Answered in this issue. See "A Practical Survey of Competitive Corn Syrup.")
2. **What is the ideal point of dryness for hard candy?**
   (Answered in this issue. See "Water," and what it does to your hard candy batch.)
3. **How should a strong sugar test?**
4. **Which raw material used in hard candy is said to improve with age?**
5. **What properties of glass make it ideally suited for hard candy packaging?**
   (Answered in this issue.)

Questions for the Purchasing Executive

1. **Name an important raw material which we receive from each of the following shipping centers: Bari, Shanghai, Aleppo.**
2. **What was the average pre-war price of cocoa?**
3. **What are the three primary greens which may be used in hard candy?**
4. **What are the leaves which are found in big boxes, and what are they put there for?**
5. **What new sugars hold promise of new and unusual developments in the candy industry?**

(Answers in next issue)

A Practical Survey of Competitive Corn Syrups—

and their adaptability to use in hard candy

by Robert Randolph, Editor,
N. K., A. L. and A. S. of Technical Staff, Collaborating

PRICE being pretty much the same all over and competition so exceedingly keen that the general excellency of service must be taken for granted, quality becomes the major, and in fact, practically the only consideration in the selection of corn syrup for hard candy.

The rapid strides made by the corn products industry as a whole in establishing a product of great purity and increasing utility has in the last few years led the candy manufacturer to take a "pigs is pigs" attitude with respect to corn syrup; to believe that all corn syrup is good in its place, and that so far as the quality and uniformity of the product are concerned, corn syrup is corn syrup.

The fact of the matter is, there is a big difference in corn syrups, not only as between the quality of this refiner's product and that, but between successive deliveries from the same refiner. The more aggressive refiners recognize this question of uniformity-control to be the biggest problem which confronts them, but they need the cooperation of the candy manufacturer to work out a product of highest general efficiency.

The "100% Sugar" Bogey

Much valuable missionary work has already been done to dispel some of the

strange notions of the candymaker with respect to corn syrup in hard candy, notwithstanding which fact, we still see hard candy ads reading "100% pure cane sugar" when the same candy might be made 50% less perishable by the use of say, 20% of corn syrup. The principal effect of this sort of advertising, aside from pandering to an outworn superstition, is to promote in the public mind a wholesale distrust for all candies which are not so made. In this sense, it might be considered "anti-candy" propaganda.

A prominent superintendent in the candy industry said to me about a month or so ago, that his factory never used corn syrup in hard candies, as they did not consider it as satisfactory a "carrier" for the flavors as pure cane sugar. If this is so, it is high time the syrup people got together with the flavor and essential oil people on this as it is a phase of candy making which might profit by more extensive research.

On the other hand, the author has tasted samples of glucose hard candies (60/40) which had been kept in storage for from one to three years, and as far as he could determine, the only noticeable change was a slight diminution of the flavor in the very oldest samples. The character of the flavor was as fresh and as natural as the day it was put in.

Yet the man who made this statement to me was the superintendent of a firm with a reputation for making some of the finest hard candies in the East.

Corn Syrup Makes a Drier Hard Candy

He went even further than this to say that he did not believe that corn syrup could help the quality of the product in any way, but in this he overlooked the fact that the great majority of high-class manufacturers who are using corn syrup in their hard candy today, are using it not so much because it is the perfect "filler," but because its component, dextrin, a protective colloid, acts to prevent the crystallization of cane sugar as well as to prevent the absorption of moisture from the air. Thus the ability of corn syrup to prevent graining and make a drier hard candy are two of its chief virtues.

Hard candy manufacturers who have come to appreciate what corn syrup has done for them would undoubtedly continue to use it, though perhaps in smaller quantities, even though the price rose higher than the price of cane sugar!

We Decide to Investigate

At the suggestion of several hard candy manufacturers, The Manufacturing Confectioner has undertaken an independent and impartial survey of leading corn syrups sold in the United States, to determine just what difference, if any, exist in the products of competing refiners which might account for these apparently deep-rooted prejudices of the few, in distinct contradiction to the findings of the many.

The results of our investigation are appended herewith. (See table below.) The code numbers, 1 to 7, in the

Survey of Competitive Corn Syrups
on the
Three Principal Markets

(The sample code numbers 1a to 7a represent all but one of the large American manufacturers of corn syrup. Samples were taken during the latter part of March, 1927. *Samples 1b, 4c and 4d were taken from tank wagon deliveries.)

No.	Where Obtained	Gravity (Beaumé)	Purity dextrose)	Ash	SO_2	Acidity	Inversion	pH value	Color (candy test)	Appearance of sample
1a	Chicago	43.1°	41.8	0.30	0.0020	0.010	3.27	5.50	A-1	Poor; very hazy and flecked.
1b	New York*.....	**42.5°**	43.2	0.28	0.0012	0.025	2 88	4.60	**B-2**	Poor; yellow tinge.
2a	Boston	43.1°	42 8	0.27	0.0024	0.013	3.25	4.35	A-1	Good; some specks.
3a	Boston	**42.5°**	43.0	0.20	0.0020	0.015	1.00	5.42	A-1	Good; slight haze.
3b	Chicago	42.9°	43.1	0.21	0.0020	0.010	1.62	5.40	A-2	Good; slight haze and slightly yellow.
3c	New York.....	43.05°	43.3	0.33	0.0024	0 007	2.96	4.90	A-2	Very good; clear and free from haze.
4a	Boston	43.05°	43.3	0.28	0.0012	0.012	2.55	4.55	A-2	Hazy; specks.
4b	Chicago	42.7°	42.3	0.28	0.0020	0.010	1.84	5.46	A-1	Good; slight haze; yellow tinge.
4c	New York*.....	43.25°	43 2	0.15	0.0020	0.013	**16.70**	4.20	**E-5**	Very bad; brown.
4d	New York*.....	43.1°	42.3	0.20	0.0008	0.022	2.81	4.95	A-2	Poor; yellow tinge.
5a	Boston	43.0°	42.7	0.19	0.0028	0.009	2.10	4.60	A-2	Good.
6a	Boston	**42.4°**	43.2	0.20	0.0020	0 009	2.98	4.50	A-1	Slightly yellow.
6b	Chicago	**43.3°**	42.1	0.31	0.0008	0.009	2.59	4.70	A-1	Good; slightly flecked.
7a	Chicago	43.0°	41.6	0.25	0.0026	0.011	2.00	5.95	A-1	Good.
Average of samples....		**42.93°**	**42.7**	**0.25**	**0.0019**	**0.012**	**2.45†**	**4.99†**	**Good†**	

†Sample 4c omitted from average. Figures in blackface type denote subnormal characterictics.

left-hand column, represent seven out of eight of the leading corn syrup refiners in this country. Following is a practical comparison and interpretation of the analyses.

Gravity, or Beaume

(Gravity is given in degrees Beaume at 100° F. and is governed by the amount of dry substance materials in the syrup. Because of its extreme viscosity, the determination was made at 142° F. and the reading calculated to that of 100° F. 43° confectioner's corn syrup should contain approximately 18% of moisture and 82% of dry substance materials by weight.)

The variation in gravity of the samples examined, from 42.4° Be. to 43.3° Be., represents a difference of approximately 2% in water-content. Low Beaume means diminished value to the manufacturer. Tests of 42.4° and 42.5° indicate the serious need of more accurate standardization on the part of the refiner.

Purity, or Sugar-Content

(Purity represents the percentage of dextrose, or reducing sugars, in the total solids. The 82% of total solids which a 43° Be. corn syrup should contain, is made up largely of dextrine and dextrose. The proportion of each is indicated by the term "purity." This proportion affects the body of the syrup, a low purity giving a more viscous syrup.)

Fourteen samples show purities ranging from 41.6% to 43.3%, not a very great variation considering that the refiner can control this factor at will. The refiner can give us a syrup with a high dextrin content, or one with a high dextrose content. The proportion of around 42%, which is to say, 42% dextrose and 40% dextrin, is furnished to the confectioner as the average which it is believed comes nearest to meeting all their needs.

However, there are indications that syrups of higher and lower "purities" will prove useful to the industry. For example, where corn syrup is used as a "doctor," it is really the dextrin which does the chief work of preventing the crystallization of the sucrose. For this purpose, a low purity corn syrup would be desirable. On the other hand, if the syrup is to be used as a filler, a higher purity would give more sweetness. There is room for considerable research on this question to determine the optimum purity for everyday use.

Ash

(The ash content of corn syrup normally runs around 0.25%. It consists principally of common table salt, the result of neutralizing the acid which is used in hydrolizing the starch into corn syrup.)

While the range of from 0.15% to 0.33% is satisfactory, it is well to note that a high ash content would be undesirable in candy-making because of the tendency of the mineral salts which the ash represents, to caramelize sugar. Also, the presence of lime salts in even minute quantities, would show a marked tendency to invert the cane sugar and cause the hard candy to become sticky.

SO_2

(The use of burning sulphur fumes absorbed in water is considered essential to the manufacture of corn products. Some of the sulphur dioxide is absorbed by the starch and in this way carried up into the corn syrup. The amount present in the finished product should not exceed 0.003%.)

The sulphur dioxide content of all the samples tested ranged from 8 to 28 parts per million, which is satisfactory. This constituent is important to the manufacturer who sells his product in the State of Pennsylvania, as this state is very particular about sulphur dioxide in confectionery.

Since sulphur dioxide is an inverting agent for cane sugar, the presence of any appreciable amount in the corn syrup, would produce an inversion of some of the sugar when cooked with it.

Acidity

The figures on acidity range from 0.007% to 0.025%. Good quality corn syrup will usually contain 0.010% or less. This figure is not as important to the confectioner, however, as the pH. "Acidity" represents the percentage of total acid present, but the activity of this acid depends, not upon the amount present, but on the concentration of the hydrogen ion which it produces. The pH value is a measure of this and is thus the real criterion by which the acidity of corn syrup should be judged.

Inversion

(This represents the inversion in sucrose which is produced by boiling with corn syrup under

certain arbitrary conditions. The candy color test is made by cooking the corn syrup with twice its weight of cane sugar and half its weight of distilled water in an open kettle to 340°F. A sample removed from the kettle at 320°F. is used for the inversion test.)

Except for one obviously unhealthy sample, the tests range from 1% to 3.27%. This slight inversion is essential as it forms a small amount of non-crystallizing sugars which thus serve as a doctor to prevent graining. On the other hand, this inversion should not go too far lest the candy become hygroscopic. The sample of corn syrup which produced an inversion of 16.70% would most certainly cause trouble if used in candy. Creams made with it would become too soft and "runny," and hard candy would immediately become sticky. A proper inversion should be between 2 and 3%.

pH Value

A knowledge of the pH value of corn syrup is immensely valuable to the confectioner. The inversion of sugar during boiling is directly proportional to the concentration of the hydrogen ion. On the pH scale, the concentration increases as the scale decreases from 7 to 0. A pH of 7 represents neutrality. Therefore, the nearer the pH of the corn syrup is to 7, the less inversion it will cause when boiled with sugar.

Unfortunately, the refiner cannot supply a strictly neutral corn syrup, as dextrin decomposes when boiled under these conditions, giving coloring matters which are very objectionable.

The samples in our survey showed pH values ranging from a relatively high concentration of 4.20 to a concentration of 5.95, which is not far below neutrality. The best corn syrups usually show up around 5.00 to 5.50. If we accept as our minimum a pH of 4.90, only 50% of the samples would qualify as good corn syrups.

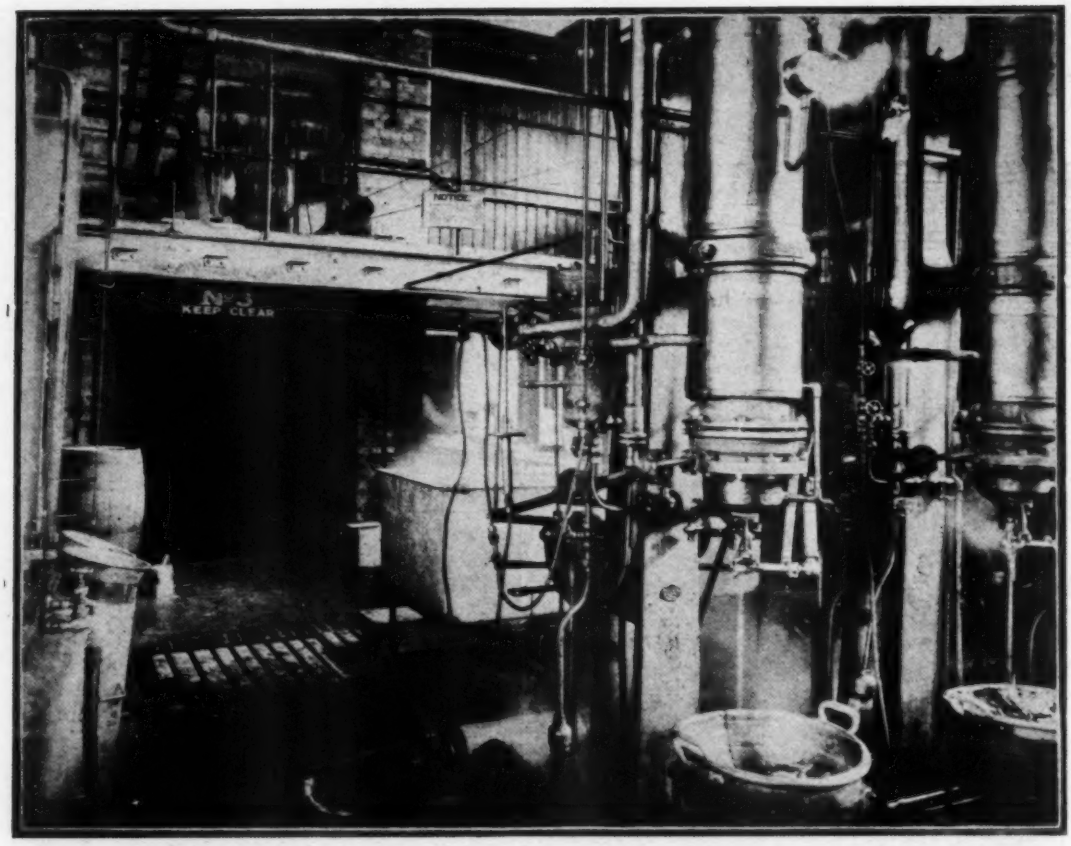
The Candy Test

The manner of making the candy tests was described under the heading of "Inversion." The method of color grading is an arbitrary one but serves the purposes of comparison. Seven samples were given an A-1 rating, and 5 samples which showed up only slightly off-color were classed as A-2. This is a remarkably good showing for so diversified a collection of samples. The sample rated B-2 did not fare so well under the rigid conditions of the test and would probably not make the best candy. As for the E-5 grading, well, something evidently happened to that sample after it got into the customer's hands, for it is doubtful if the refiner would ever have permitted it to get out to the trade in the condition in which we received it. The pH was unusually low (4.20), the inversion extremely high (16.70%) and the natural color of the syrup before cooking, a very bad brown.

On a repeat test run subsequently with an entirely different set of samples from the refiners, refiner No. 7 came out with an A-1 grading again, and the rest came out with an excellent A-2, with the exception of refiner No. 5, whose product showed up in the candy, distinctly off-color.

All in all, the results are flattering to the American corn syrup refiners in that they show a universal regard for a high standard of quality. However, corn syrup is one of the most difficult of our raw materials to produce, consequently, it is not at all surprising that some manufacturer's syrups will test very good at times and not so good at others; and while the majority of them usually make corn syrup of a high quality, it is evident that they are not able to control it as well as they might like to.

The survey shows conclusively that the candy manufacturer must not take the quality and uniformity of the product for granted, for it may reasonably be said that "There is corn syrup,—and corn syrup."



View in the Toffee Room at Messrs. J. Lyons & Company's Model Factory at Greenford, showing two of four Cookers and the B. T. H. motor of 15 H. P. operating them. On the same gallery and at right angles to this motor is one of 7½ H. P. which drives two Mixing Pans situated behind the Cookers.

Water—and What It Does to Your Hard Candy Batches

by Clifford Clay

To the practical men who are readers of the MANUFACTURING CONFECTIONER, *Cliff Clay is one of the "old familiar faces." He is abroad now, getting first-hand information on the methods of candy making in other countries. He will continue this series in coming issues. There is real meat to Cliff's articles. Be sure not to miss them.*

HARD CANDY is no more and no less than a solid syrup. The three factors, sucrose, non-crystallizable sugar and water, must be so balanced as to ensure the prevention of crystallization. At the same time there must not be so much hygroscopic material in the mixture as to permit moisture-absorption under ordinary atmospheric conditions to over-balance the normal proportion of water present.

For mechanical reasons unless some water is present, it is impossible for crystallization to take place. The normal "water of crystallization" in the sugars found in "pure sugar" hard candy is practically negligible, hence the least trace of moisture will be greedily seized by these sugars to restore equilibrium—which is to

say, it will in time produce graining.

The time factor is important. The writer has prepared hard candy drops which contained less than one-half of one per cent of moisture and stored these drops in jars which had been exhausted to 26 inches of vacuum. It took 28 months before any change was evident, but at the end of that time a white film formed on the surface of the drops and it was evident that the old enemy had won. A close inspection after the jar was opened confirmed this fact.

Vacuum Packing vs. Atmospheric Pressure

It is not certain that vacuum packaging is the ideal way in which to keep Hard Candy. There is always a small amount of moisture in Hard Candy. Under the influence of vacuum this will in course of time be drawn out. This is subsequently deposited as sweat on the surface of the candies, causing them to grain. Normal air pressure and a very low humidity are apt to be better. The moisture content of the air in an air-tight container should never be so high that it will precipitate out at the lowest temperature the jar will encounter.

Although you get it for nothing, or next to nothing, water is distinctly one of the raw materials of hard candy, and an important one. This water should be neutral: free from acid or alkaline-reacting salts.

There are as many different waters as there are different locations. The difference is not always noticeable or worthy of serious consideration, but it may be. The writer has had more difficulty with water from the point of view of color in the goods than from any other. Sometimes this was due to iron salts but more often it could be traced to the hydrogen-ion concentration.

It has been said that this hydrogen-ion thing was a fashionable disease to which, like bad teeth, all ills could be traced. There is strong reason to suspect that this is true, but still there are many who will attest that even teeth may not be *wholly* relied on.

Fishing in the Cooling Tables

This is not the end of the water trouble, however. In one plant they used to set aside a day every month to shovel the sand out of the cooling tables. This was a great town for water sports, anyway. A day before they opened the tables for their mensural dredging, the boys would spend ten minutes at the drinking fountains with a net, and in that short time they would secure enough live-bait to catch all the muskalonge in the tables next day.

Occasionally an unintellectual fish would get crossways over the outlet and block the flow long enough to heat up all the water and kill off his friends, then for obvious reasons there had to be a special clean-out and the sport for the season was spoiled. It was not in the writer's state that this happened so he got fined both for fishing without a license and for taking fish under size. This is the penalty of laziness for it would have taken very little work to strain the water in the glass before he drank it. Still, how could he know the floor sweeper was a game warden?

Water More Than a Raw Material

This brings us back to the point that water is not only a raw material but the most important factor in the deterioration of hardy candy. If there were *no* water left in the finished goods there would be little need to worry over the proper proportions of the various sugars until after the goods had been exposed to the air. It is the fact that there is water present in the candies themselves which accounts for their "going off" in a perfectly air-tight container whose contained air is low in humidity. It accounts for the graining of the pieces the writer kept in vacuum. Anything below 1% of moisture in the finished goods is relatively safe, while not in excess of .7% has proved to be about ideal.

But .7% is not as easy to get in practice as it is to write it on paper. Between 1% and 1.5% may be considered a very good average for normal, open fire cooking. The term "average" is purposely used for there are many elements which enter into securing the ½ of 1% difference between the limits mentioned.

Apart from the intensity and steadiness of the heat, and the possibility of cooking every batch of sugar up to the full height, there is always the question of the barometric pressure on that particular day, to contend with. At this low moisture content it becomes increasingly difficult to reduce it still further.

Reducing Air Pressure Lowers Moisture Content

The water in the batch must be converted into steam against the pressure of the batch and the weight of the atmosphere. It is to be presumed that the moisture is divided evenly throughout the batch and, therefore, must be in very minute divisions. The viscosity of the batch increases with every degree the thermometer rises, so that when this high concentration is

(*Continued on page* 50)

A prize window in Columbus, Ohio
(Photo Courtesy The Glass Container Assn.)

Seven Factors Influencing Selection of Glass for Packing Hard Candy

by Thayer L. Bancroft
Associate Editor, The Glass Container

GLASS jars and hard candy have long been associated together. Fifty years have wrought vast changes both in the methods of packing and in the manner of merchandising but the two are as intimately associated today as they were when father rode a high-wheeled bicycle to work.

Recall the days of your youth when you stood in front of the neighborhood candy store with a penny clutched tightly in your chubby little fingers . . .

Through the glass window a paradise of candy stretched before you—chocolates, taffy, nougats, caramels, licorice and hard candies. Your eyes lingered longingly on the hard candies especially. There was something tremendously fascinating about their gay and vivid colorings that seemed to signal to your inner consciousness that they were good to eat. In the lexicon of the advertiser—eye-appeal!

Choosing by Color and Size

You wrinkled your brow and weighed carefully in your little quarter-horsepower mind which looked the most for the money, which combined the most gorgeous array of colors with the maximum of size. Finally, having made this important decision, you ventured inside.

On the counter stood a huge glass jar containing a duplicate assortment of these same hard candies you have seen in the window. The awful thought occurred to you that perhaps your window selection had been a trifle hasty, that perhaps this jar contained bigger and better hard candies. Urged on at last by the ever-patient store-keeper, you steeled yourself to the ordeal and went through the agony of choosing all over again.

The cover was loose. As the storekeeper pulled it off, you reached in a dirty little fist and took out the stick of your preference. Sanitary? Well, who ever thought of that in those days? Sticky? Sticky was no name for it. It got all over your fingers, your clothes and your face. But it tasted as good as it looked and you left the store with faith unimpaired in the power of the Almighty Cent.

Air-tight Closures Introduce a New Era in Hard Candies

Hard candies were always sticky, then. The covers to the big jars would come off and on perhaps fifty times a day, till the candies literally "bathed" in the humid atmosphere. Loss of gloss, sticking and graining were the three inseparables of that period in hard candy history.

Today there has come a change. The development of large-scale production, the manufacture of a drier product, and the perfection of air-tight glass container caps which may be depended upon to keep it in that condition, have combined to revolutionize the merchandising of hard candy. The individual package has come into its own.

No longer helplessly dependent upon fickle weather conditions, the manufacturer can be certain that his product will be just as fresh and attractive-looking when his customer opens the package after three weeks or three months, as it was when it left his air-conditioned packing rooms.

"Individual Show Windows"—the New Note in Merchandising

Why is glass the logical container for hard candies? First, as we have noted, hard candy sales are in a large measure dependent upon the visual appeal of the candies themselves. They are purchased because they look colorful and attractive—frequently for no other reason.

There is nothing about the glass package to interfere with the eye-appeal of the candy itself. The container becomes a highly individualized show window, enhancing the beauty of the material it covers. This visual element is the new mode in modern merchandising.

The children are still, as they were 25 and 50 years ago, our most important hard candy customers. The average child trusts nobody but himself when he has money to spend. He wants to see what he is buying. Woe betide the storekeeper, or the manufacturer for that matter, who tries to sell a product sight unseen.

The child buys hard candy by size and color; the adult arrives at the same point by a more circuitous route, for quality on the first-sale means gloss, pleasing color combinations and other visual indications of fine workmanship. The glass jar serves to put the story over.

A Bid for Consumer Confidence

No need for elaborate sample displays taking up precious space and deteriorating beyond hope of sale,—each package shows its contents clearly. Indeed, the glass container makes a subtle bid for the customer's confidence, just as if it said: "You see, I have nothing whatever to conceal." The hard candy manufacturer who pretends to put out a quality product must be prepared to go through with it if he uses a glass container.

A Hazelcup Vacuum Sealing Machine at the Belle Meade plant at Trenton, N. J. Vacuum sealing is the ultimate in hard candy packaging.

This is an age of individuality. We try to express our personalities by means of our clothes, our cars, our houses. The public naturally prefers distinctive products. Glass lends itself readily to distinctive treatment. It can be made to express the individuality of the manufacturer. In this way the glass package becomes a valuable sales agent. A product in glass is on dress parade.

Heat-proof and Moisture-proof

Hard candy being particularly susceptible to atmospheric conditions, glass makes an ideal container because of its natural insulating properties. It guards its contents from extremes of heat, keeps out moisture and protects the candies from sudden changes in temperature which might otherwise induce sweating.

If you are not convinced that glass is a remarkable insulator, you might try this simple experiment: heave a rock through your living room window about the middle of January and see what happens to the

The glass jars are "unit show windows." They permit each type of candy to express to the customer a distinct individuality of its own.

furnace. It is advisable, however, to have your estate wound up in advance.

In an article which appeared in the May, 1925, issue of *The Glass Container,* entitled "The Effect of Atmospheric Exposure on Soft Candy," the Research Department of the Glass Container Association declared that the results of their experiments had shown conclusively that "soft candy when exposed or when packed in the customary cardboard box is subject to all the deteriorating influences of the atmosphere and in a relatively short time becomes a sad commentary on the manufacturer's quality standards." This is undoubtedly equally true of hard candies.

The flood of cardboard boxes, wood pails, boxes and barrels which puts in an appearance immediately before the Christmas holidays serves admirably the purposes of enormous volume and quick turnover concentrated in a short period when the weather is cold and the barometer low. But the quickly sealed glass jar is the long-range, adverse weather container for hard candies. Unsealed and re-sealed a dozen or more times in the customer's steam-heated home, it protects its contents from loss of gloss and dryness right up until the very last.

Multiplicity of Air-tight Caps

Within the last ten years tremendous advances have been made in the development of air-tight closures for glass containers. Through membership in the Glass Container Association the various cap manufacturers have pooled their problems, giving over their work to its Research Department. Many of them conduct research departments of their own and today there are many absolutely airtight closures on the market.

The glass jar is probably one of the least expensive, if not the least expensive hard candy container on the market. And even secondhand it is not lacking in utility value. It is always valuable to the housewife as a container for home preserving or for any other of the ingenious uses which housewives can always find for glass containers. Herein iles a distinct advertising value for the manufacturer. For, either because of the distinctive shape of the jar, or because of the manufacturer's label, the housewife is constantly reminded of the original contents of the jar. There is no advertising that is any better or more lasting than this.

Breakage Eliminated Through Strength

Within the last twenty-five years the art of commercial glass-manufacturing has been made practically perfect. For with the development of the automatic glass-blowing machine, glass containers are now made of uniform quality and adequate strength. The glass jar as it is now manufactured is not only as strong as any of the other types of containers, but when packed in the practical corrugated and wooden reshipping containers, the old bugaboo of breakage is practically non-existent.

To sum up. Glass is particularly suited to hard candies,

(1) because of the innate attractiveness of the container itself;

(2) because of the natural beauty of hard candy which the glass jar makes visible;

(3) because of the opportunity afforded to the manufacturer to use a distinctive

(*Continued on page* 50)

The Breath of Industry

A True Story of a Hard Candy Tragedy

by W. E. Lowell
Refrigerating Engineer

WHILE on a recent trip to the East the writer purchased a jar of hard candies for his Mother, who is very fond of this type of confection. It was found upon opening the jar that the goods were very badly stuck together, in fact to such an extent that each individual piece had to be pried out and this operation was attended with danger of shattering the edges of the neck of the jar and getting chips of glass into the candy.

While endeavoring to get the candy loose from the jar, the writer's mind immediately traveled back to some of the candy plants that it has been his privilege to visit and the following tableau was brought to his mind which really took place in one of these plants.

This particular city had been visited with a protracted rainy period during the first week of September and they were making a frantic endeavor to get their stock in shape for the Christmas business. The foreman had sent the help home from the hard candy department on three successive days because it was a physical impossibility to manufacture any hard goods or satin finish because of the weather conditions. On that particular morning, which had a semblance of being a fair day, a sudden shift of the wind brought about a very humid condition in the midst of manufacturing operations and the foreman appealed to the manager of the plant for advice as to just what should be done. The following conversation took place.

Foreman, "It looks as though we are going to be up against it again today. I have run off several batches and the stuff is beginning to stick up in the bins and I am really afraid to pack it, but we have to do something because it is getting worse every minute that it lies up there."

Manager, "Have you got the fans a-going?"

Foreman, "Yes, but they don't seem to do a bit of good."

Manager, "Well, I guess you had better shut down and not run any more batches, but if the stuff is fairly good, we better take a chance on packing it because we are way behind and we have got to do something with the stuff you have already run off."

Foreman, "Yes, it wouldn't do any good to cover it up because it is too sticky now."

Manager, "Well, you might just as well pack it up and we'll take a chance."

The jar of candy that I opened did not come from that same factory, but it recalled so vividly to mind the scene I had sat in on some time prior to that and I could not help but feel that a similar condition existed at the plant where this candy was manufactured. No doubt similar conditions exist in many plants and chances are taken which react against repeat purchases of that type of candy because no one wants to put in a great amount of effort removing product from glass jars.

It seems a pity after the manufacturer has exercised so much care in the selection of the materials that enter into his product regarding their purity, strength and flavor, extreme cleanliness under which they were manufactured and the high-grade equipment used, to have had finished product spoiled by the weather. There is no doubt but what the cause for this sticking was the excessive humidity that obtained in the department on the day this jar was packed.

Alibis Don't Work on Candy Buyers These Days

In days gone by the manufacturer could excuse a condition of that kind in his own mind and also make due and sufficient explanations to his salesmen, who in turn would pass it on to the jobber and merchant, then on to the consumer, but today there is no excuse for a condition of that kind because the conditions within his plant can be placed under perfect control so far as temperature and humidity is concerned and the buyers of candy know it.

The control of these conditions is but another step in his manufacturing operations and it is just as vital to have the temperature and moisture content of the air in perfect condition as it is to cook his batches to the proper temperature. No clear thinking manufacturer would build a plant today without providing it with suitable heating equipment to guard against the severe conditions of the winter time. Therefore, isn't it just as reasonable to provide suitable equipment to guard against the conditions imposed upon manufacturing in the summer time.

Of course, there are certain parts of the United States where hard candy can be made both summer and winter under ideal conditions and those places are chiefly where they have a high altitude and a low relative humidity, such as places in similar locations to Denver and Salt Lake City, but it is not always possible for the manufacturer to move his manufacturing operations to these locations. Therefore, his next best expedient is to reproduce the ideal climates of those places in his own plant which can be done at a reasonable expense and which is being done at the present time by a large number of candy manufacturers. The manufacturer who provides ideal conditions for the manufacture of his various products places himself in an advantageous position over the one who makes similar products without such control, with the consequences

(*Continued on page* 45)

40 Centuries in Quest of Hard Candy

Starting a series of articles on the historical background of candy industry

by O. H. Kneen

PERHAPS no single commodity of modern times has caused so much happiness as sugar. Nor, on the contrary, has any article caused so much strife. The voyages of Columbus, settlement of the New World and its warfare, slavery, the trade wars of Napoleon after Trafalgar, centuries of conflict have revolved around the delectable crystals of sugar cane and beet root. Even the roots of the latest World War seem to have fed upon the bitterness of international sugar-rivalry and Germany's invasions with her low-priced beet sugar.

These major events in the world's history occurred after the art of boiling sugar was invented, and from which followed the growth of an insatiable human craving for sweets. Successively the refiners and confectioners of Venice, Antwerp and England wrested the sugar leadership of the world.

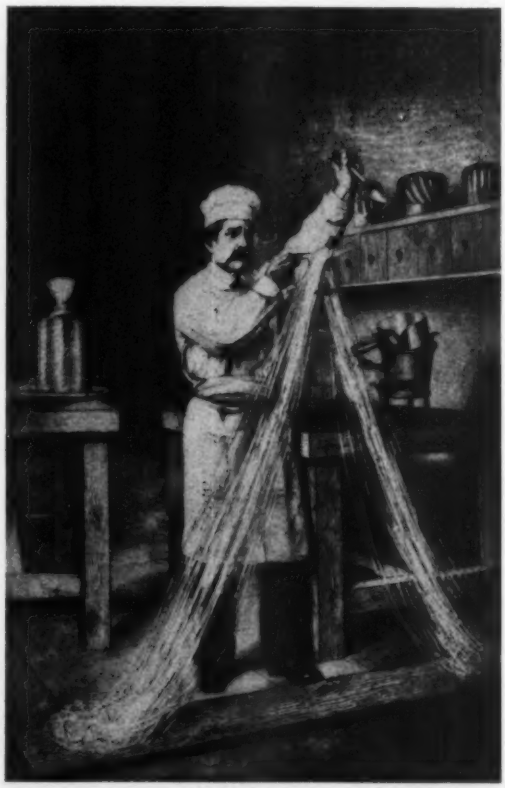
What Will 1977 Think of 1927?

Because our own country today holds sway in the world of sweets, a brief story of the marvelous past may prove of interest to the modern confectioner. Bygone experience may even prove of value in solving present-day problems, for the history of sugar and candy is one of unceasing demand, a growing sugar-hunger which impelled nations to expend their blood and treasure. Perhaps a study of the centuries ending with 1927 will give an insight into 1977.

Just how and when the art of making candy was invented is lost in the mists of antiquity. As far back as 4000 B. C. are records and picture of methods and molds used for making soft wafers and pastes, for which bee's honey formed the base. Egyptian papyri of around 2000 B. C. mention honey sweets, with figs, dates and nuts combined. "Wafers made with honey" are recorded during the Exodus of the Children of Israel; these were made with flour and honey.

Meal-end, the Place for Candy

Wealthy Romans, Grecians and Egyptians early learned to serve similar confections at the end of their meals, the logical place for sweets, which nowadays, be it noted, is usurped by ice cream, pastries other sugar things. The confectioner seems to have early attained an honored position, using boiled honey, ground almonds and such materials, one recipe even urging the use of "plenty of pepper"!



The gentleman with the heavenly expression is spinning sugar.

From the Royal Book of Pastry and Confectionery by Jules Gouffé, "chef de cuisine of the Paris Jockey Club," translated and adapted to English use by Alphonse Gouffé, head pastry cook to her majesty, the Queen, 1874.

The Candymaker in Herculaneum, A. D. 79

Thus it is clear that the confectionery industry is one of the oldest in the history of mankind. The sweet tooth has its roots in ancient times. When Herculaneum was unearthed from its shroud of hardened lava, a little confectioner's shop was uncovered, with molds and pans quite similar to those of today.

But for all the handicaps endured by the pioneering confectioner, he managed to turn out an elaborate and creditable array of toothsome delicacies. A finished ornament, or "assiette montée," prepared to receive its precious cargo of sweetmeats on the cardboard box or pedestal below.

But the base was always honey, and its supply depended upon the industry and number of bees at work. It is evident, however, that hard candy was unknown until sugar crystals were at least partially isolated.

An old Hindu legend names sugar cane as a plant brought down from Paradise. One of the oldest records of the cane is that of the feast of Belshazzar, five centuries before Christ, at which the Babylonians had sweets made from the juice of "honey bearing reeds." Nearchus, a general in the Indian expedition of Alexander the Great, in 325 B. C., brought home quantities of the "sweet sticks," with tales of native production of "honey" without the aid of bees. From the 1st century onward, writers mention the "sweet sap of the Indian reed," and the granulated extract termed "Indian salt."

Early Sources of Other Sugars

Although painstaking investigators have determined that Bengal, India, raised the sugar cane first, and there also have been found the earliest records of cane sugar, there were other sources of sweets being developed, even at that early date. At least some of the coarse sugar, "mixed with a large portion of molasses," apparently came from the palm trees. A sweet-tasting gum exuding from the stems of other plants was confused with cane sugar by some travelers. It is recorded that a sort of glucose made from the starch of barley has been made and relished as a confection by the Japanese, for many centuries. Thus, in these days of a multiplicity of sugars, candy makers can reflect that from the earliest history non-crystalline sweets were both toothsome and popular.

Even in China, it is recorded, tribute was paid to the Emperors in sugar cane. But everywhere the dark, sticky half-cooked juice only was used for a sweetener; the sugar was there, but they could not find it.

Apothecaries, We

Apparently it was the physicians of the Tigris Valley, trying to purify their drugs, who first learned how to extract the white crystals in the 5th or 6th century A. D. With these crystals they skilfully disguised their bitter potions, rather more effectively perhaps, than the Grecian doctors with their honey-smeared cups. For centuries sugar remained a drug, and the art of "purifying" sugar, by repeated remelting and clarifying, was strictly a laboratory process, yielding infinitely small quantities. But sugar became indispensable to these

The early candymaker, a bootlegger? This still and stove were part of the regular equipment of the confectioner in 1820. Every man his own flavor specialist. The author of the accompanying manuscript states "the recipient should be supported on a mattress of straw, which is omitted in the plate."

dispensers. If you lacked something essential in those days, you were said to be "like an apothecary without sugar."

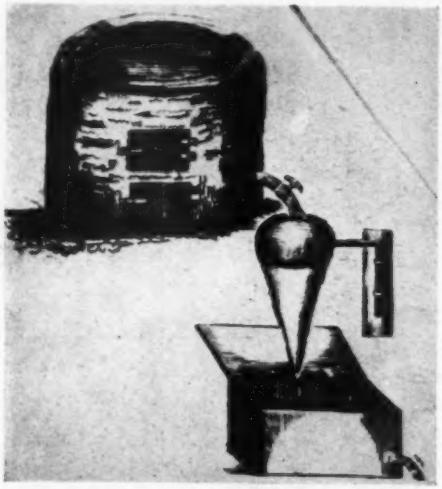
We can readily believe that the wealthy took their costly medicine with pleasure; some even ascribed to it various marvelous healing properties (especially for "sweet teeth," one might imagine). But others, less able to afford it perhaps, spread libelous tales in their families that sugar was bad for the lungs, caused overheating, and even apoplexy—though possibly the "stroke" came when the sugar-refining druggist presented his bill!

Sugar, the War-Spoils of the Ages

So valuable were the tiny crystals at that time, that when the Byzantines captured Persia, in 627 A. D., they carried away sugar as spoils of war from the Palace of Dastargerd. Our forebears did not regard their sugar lightly. Perhaps the discovery, many centuries later, that negroes and cattle fed on sugar cane grew strong and vigorous, helped to dispel the distrust of sugar's effect on the human system.

The Birth of the Nougat

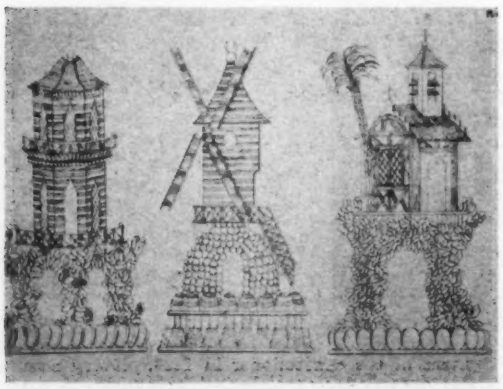
After a while the Arabs became the leaders of world thought and research. They learned from India how to partially refine sugar, and they sold the product to Europe. They made nougat, much as they do today. Nor did they allow their sugar cane to "waste its sweetness on the desert air." They carried it to all the Mediterannean countries as they overran them, to Sicily in 703 A. D., to Spain in 755, to Africa in 900, which accounts for the astonishing similarity of name throughout the world. Their word for sugar was "sukkar," and it is thought to have originated with the ancient Indian "Sanscrit," in which the word for sweet is "goor," and very sweet, "segoor." The major languages agree very closely with this today. The French call it "sucre," and Old English evolved from that to sugre, suger, and finally sugar. The Gaelic is "sug," the Spanish "azucar," the German "zucker," and the Italian "zucchero."



As late as the first half of the 19th century the confectioner had to remelt and clarify his own sugar. Above, the equipment used for the purpose, described in a contemporary handbook as "a copper boiler, fixed in brick and mortar, to clarify sugar in large quantities."

Below, a flannel strainer to strain the clarified syrup before it passes into the copper storage reservoir.

Then various sweetmeats began to be made from the crude sugar, in which almond and sugar pastes were favorites. All through the Middle Ages fruits boiled in honey were the piece de resistance. The Crusaders found sugar cane in Palestine, and apparently without any great difficulty learned to like sweets. Marco Polo, on his long trip to China in 1270-95, reported many sugar "factories" in South China, making sugar from the cane at "low" prices.

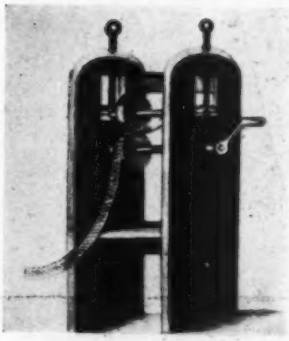


Some of the fancy and elaborate "subtletys" and table-pieces made by royal confectioners of the Middle Ages.

"Subtletys" of King Richard's Time

Some years ago some great mill stones were found at Ahwaz, India, showing clearly that sugar was commercially refined, in a way, in the valley of the Tigris and Euphrates, as early as the 10th century A. D. The island of Sicily produced sugar in quantities. Tha-alibi, an 11th century writer with a modern column-conductor's name, tells of 50,000 pounds of sugar exacted as tax-revenue by the Sultan of Turkey. Sugar ran a close second with gold in value, in those distant days.

We have also a book written, it is said, in 1390, by the cook of King Richard II,



Machine (?) for making gilt paper borders

NO mere sugar-boiler could become a first-rate candymaker until he mastered the arts of copying and wood carving. Right, a wheel made of walnut, used for engraving new mould designs in wood.

telling how to make the very elaborate "subtletys" of paste, sugar and pastry. These often included life-like figures of lions, tigers, hunting scenes and religious figures, done in spun sugar. But these were for royalty exclusively; sugar was still too expensive for common folk.

When Demand Exceeded the Supply

In 1319 was made the earliest shipment of sugar on record, 100,000 pounds being sent to England in exchange for wool. In 1264 the price was quoted as 1 to 2 shillings per pound, which at today's valuation, would be from $5.00 to $10.00 a pound! All through the 14th and 15th centuries prices remained high, even after a Venetian had invented the modern method of refining, in 1470, for which valuable contribution to the world's enjoyment he received a prize of 100,000 crowns. Cone and loaf sugar were also invented in Venice; Venetian loaves of sugar became as good as gold all over the world.

Naturally there followed a great increase in supply and in utilization of sugar. But the "sugar trust" took full advantage of the fact that the wealthy were as yet unsatisfied. Apparently the latter, if such they were, bought up the supply, for the price remained far above the reach of the general public. The demand for sweets far exceeded the quantity which refiners and confectioners could make—a condition which doubtless would appeal to the candy makers of today.

Why Columbus Discovered America

But the Venetians made the mistake of boosting the price still further. In 1482 it was $2.75 per pound in England, almost double the price of a century before. European merchants determined to go direct to India, the original source, for their sugar.

Thus it came about that Columbus received aid in his proposed search for a shorter way to India and Cathay, for jewels, gold, perfumes, rare spices but especially sugar. At his death he still thought he had found India. On his second voyage in 1493, he carried sugar cane to the West Indies and started plantations. Of course, when capitalists learned how amazingly the cane flourished in the warm, damp climate of the semi-tropics, they found the money to finance further ventures. The cane was carried to Hayti, Brazil and Central America, and thus was directly responsible for the white man's development of the New World, with all the attendant advantages and troubles which have followed.

The Origin of the Slave Problem

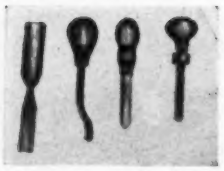
As early as 1543 a sugar mill was set up in Cuba, and in later years the rich soil of this little island caused it to become known as the "Sugar Bowl of the World." Today it produces over one half of all the vast shiploads used in this country, 6,171,267 tons in 1925.

Those were the days of fortunes in sugar. The yield from virgin soils in the New World, coupled with the Turkish conquests and misrule of 1453-1571, rapidly killed off European cane-growing. Capital flowed to the tropics, as planters learned to "import" literally millions of unwilling black slaves from Africa, to replace worn-out natives. Thus sugar produced a race problem which we have yet to solve.

To the Caribbean seas came white men and black, red, brown and yellow, some willingly but many more by force of arms and treachery. All were there for the purpose of satisfying the world craving for sweets. The flags of six foreign nations flew successively over the West Indies, and while slavery existed, vast profits were made. Naturally, as sugar supplies increased, the pharmacists began to make candy in real quantity.

Enter Cocoa

In 1519, when the Spaniard Cortez conquered Mexico, he found the natives using an infusion of tiny insects for making a bright red coloring matter. Thus cochi-



THE paper box had not yet become the mode for packing milady's sweetmeats, so the candymaker was forced to provide his own equipment for the "findings."

Right, a wood block, hollowed in the center, containing a tool for cutting out borders of paper. Left, steel tools used for engraving the mould shown on page 41.

neal, and the principal of coloring sweets, were given to a waiting world. But of perhaps even greater importance to the confectioner Cortez watched the unclad savages mixing powdered cacao-beans with maize, to make sugarless sweetmeats, with dried fruits and nuts as well. Nor were the Indians slow to learn the use of sugar from the cane which was introduced.

English navigators sailing into the Spanish Main, returned with a powerful taste for sweets. The delicious confections made from chocolate "caught on" in Europe, where from the beginning raw sugar and molasses were mixed with the bitter cacao powder, both for drinking and eating chocolate. No confectioner needs to be told of the large place which chocolate has held ever since in the candy industry.

Refined Sugar, a Table Delicacy

Now came Portuguese and Dutch traders, who carried to Europe's evercrying markets all the raw sugar they could gather. In Holland, especially Antwerp, arose great refineries. Some time in the 16th century England made some attempts to refine sugar with bullock's blood, filtering through linen bags, and boiling to recrystallization. Queen Elizabeth served sugar at her table, as a rare delicacy! Great trading companies were outfitted to bring it from foreign lands.

One would think that prices would tend to decrease, and they did for a while. Then the Mohammedans stopped the eastern trade routes, and again sugar became a luxury, in most astonishing demand. Apothecaries and candy makers bought their sugar in the crude, and clarified it themselves. In 1585 England still paid a shilling or more per pound. But that same year the Duke of Parma sacked Antwerp, and England seized the opportunity to build her own refineries. When the Pilgrims left Plymouth in 1620 the best refined sugar was selling for a shilling and a half, though "kitchen sugar" was down to elevenpence a pound, several dollars by today's values!

The Fall of Antwerp

Germany, Spain and Italy also had their refineries, such as they were, but England forged ahead. With her improved methods, great fleets, and navigation acts, she fast became the center of the industry, and by the latter part of the 17th century, Antwerp's fall was complete.

In the 1600's prices steadily dropped as the New World supply increased. By 1699 common sugar sold for sixpence a pound, and was selling by the hundred-weight instead of by the pound. The average family could afford some sweets, but for the increasing quantities of coffee and chocolate, they used the cheaper molasses or "treacle." Coffee houses did much for politics and sugar refiners, but tea at 60 shillings the pound was still quite out of reach. About 1660 grape and other fruit sugar was discovered, but in spite of efforts, no commercial supply was found.

Boiled Sweets from the Ganges

A grateful posterity is unable to give due credit to the first man to discover the art of boiling sugar and pulling or casting hard candies. Very likely some druggist or royal chef, more or less by accident, learned that prolonged boiling changes the molecular structure of the crystals. But if spun sugar and hard candies were known to the Middle Ages, they were not for the "hoi polloi."

In the first half of the 7th century, it is said, the art of boiling sugar was known along India's Ganges. But as late as the 16th century, raw, coarse brown sugar was the common sugar. Repeated clarifying and remelting were required by the confectioner to remove the impurities; ox-blood and charcoal being the common clarifiers. The 20th century, factory-refined product has given the candy maker of today much to be thankful for.

The Advent of Sugar-Chemistry

The earliest confectionery book that has come down to us is a curious old vest-pocket edition of "The Cooks and Confectioners Dictionary," published by J. Nott, in 1723. Over two centuries ago Mr. Nott

(Continued on page 52)

R. H. Morgan, B. Sc., gives us the British Slant on making

"High Boiled Sweets"*

AN examination of a hard sweet reveals sugar, suitably colored and flavored, existing in a hard vitreous state, more or less transparent, and devoid of its natural crystalline structure. These are the high-boiled sweets.

Obviously in this type of confection the sugar is in some kind of supercooled condition, and its hardness implies a very low moisture content. Generally speaking, the hardness of the resulting cold and uncrystallized solid after boiling a sugar solution to different temperatures, depends upon the amount of water left behind—the higher the temperature the harder the solid produced, and *vice versa*.

In high-boiled sweets two essentials must be satisfied—viz., the amount of water present must be extremely small, and the sugars present must be prevented from crystallizing.

Sugar Boiling

To satisfy the first condition, the solution of sugar, or of sugars, is treated to a comparatively high temperature, ranging anywhere between 280°F. and 320° F. The methods of boiling vary according to the source of heat employed. In the old days an open pan over a coke fire was invariably used. Now, compressed air and gas burners, steam coils, and special vacuum cookers form part of the equipment of the modern factory.

Whatever the method of heating, the object of the sugar boiler is to boil the sugar as rapidly as possible without burning it, and to get rid of as much water as possible.

The second essential in the manufacture of high-boiled sweets is that the latter must not contain sugar in a crystalline form. By the time a sugar boiling reaches, say, 300° F., very little water is left in the mixture, and if the syrup was cooled the supersaturated solution would deposit the excess sugar in the form of crystals. To obtain this solution in a supercooled condition by exercising great care in the cooling process may be possible on a laboratory scale, but certainly not in actual works practice.

"Killing the Grain" by Acid

It has been found that crystallization of sugar can be retarded and prevented for some time by the addition of substances of any uncrystallizable nature—*e. g.*, invert sugar. In passing, it might be mentioned that even the presence of certain chemical salts has a considerable effect in this direction, as can be instanced by the production of molasses in a refinery. In the manufacture of confectionery, one method of "killing the grain" (*i. e.*, preventing crystallization) is to add a substance of an acidic nature to the boiling which causes some of the sugar to become inverted. On cooling the syrup the invert sugar so produced prevents the unaffected sucrose from exhibiting its natural crystalline form.

Great care has to be taken regarding the amount of invert sugar formed in this manner, as the latter is very hygroscopic, and so attracts moisture. Also, invert sugar, if present in large amount, prevents the resulting solid from attaining the required degree of hardness. In order that the inversion process can be controlled as far as possible, a weak acidic substance, such as cream of tartar, is used as the inverting agent, and the quantity added is regulated so as to produce the minimum amount of inversion necessary to "hold" the remaining sucrose in a vitreous state.

It is difficult accurately to control this reaction, because factors, such as time of boiling, etc., greatly influence the result.

"Killing the Grain" by Glucose

The acid or tartar method of killing the grain has to a great extent been superseded by a method involving the use of glucose or corn syrup.

In sugar boiling a certain amount of the glucose syrup is added to the ordinary sugar, and its presence prevents the latter from forming crystals. There is no doubt that the dextrins present play a great part in this process and by some kind of colloidal action prevent the sucrose from crystallizing.

Time and Temperature

The factors of time and temperature play an important part in the boiling process. Owing to the softening and deliquescent effect of invert sugar, it is necessary to check the production of this form of sugar as far as possible. Acidity of the water used tends to cause a certain amount of inversion, and therefore the time of boiling must be as short as possible. On the other hand, alkalinity, especially at high temperatures, tends to decomposition and disruption of the sugar molecule, producing highly colored products, with the result that the temperature to which a syrup can be heated is limited. The advantage of a vacuum cooker shows itself here in that a practically dry sugar solid can be obtained in the minimum of time without the necessity of heating to a high temperature owing to the vacuum.

Hardeners

It was found many years ago that sulphites added in small amounts to sugar boilings successfully masked any production of color by their

*Excerpts from article by R. H. Morgan in July Issue of "Food Manufacture", London

View in the Toffee Room of Messrs. J. Lyons & Company's Confectionery Factory at Greenford, showing two B. T. H. motors and motor starters, of 20 H.P. respectively, situated on the right. The larger motor drives three Belhaven Cutters, and the smaller drives two Rolling Machine and a Drop Roller.

bleaching action. Afterwards it was also realized that this type of chemical acted as a drier and hardener, in that it considerably reduced the amount of invert sugar formed during the boiling process. While the use of bleaching agents has been definitely prohibited, other substances can be used for hardening purposes. As was mentioned before, both acidity and alkalinity have a detrimental effect on boiling sucrose, and in order to counteract such effects, the hardener must be one which is capable of preventing a great change in the pH concentration (*i. e.*, degree of acidity) during the boiling. Lime water, washing soda, and the alkali salts of weak acids generally, have been used as driers with varying degrees of success.

Current Bibliography

How Life Savers, Incorporated, "Capitalized Minutes" is a story told by pictures in *Factory*, July, 1927, under the caption, "War Against Time." The pictures show continuous processes in manufacturing and packaging speed up production shortening the time to the minimum from the receipt of the raw material to the shipment of the finished goods. Experiences of other lines of manufacturing are also related in this article.

Chain Store Age for August, 1927, has an article based on an interview with Mr. H. B. Kingston of the MacDiarmid Candy Co., of Cleveland, on "How Photographs Can Be Used by Chains." The MacDiarmid Candy Company has been using specially posed photographs for window and store displays effectively to stimulate sales.

The American Food Journal has been running a series of articles on "Accomplishments in Food Field." In the July issue is an article telling of the growth and accomplishments of the Curtis Candy Company, Chicago.

The 1926 Commerce Yearbook—a resume of the industrial progress of 1926—is now available. It follows the outline of last year's book, giving indexes of value of sales of chain stores in which a column is devoted to candy chain, showing comparison between various years and variation in sales during the different months in the year. A section is devoted to statistics on sugars, production, consumption, etc. There are also sections on other major commodities. This book is $1.00 and obtainable at any district office of the Bureau of Foreign and Domestic Commerce.

Last month's Questions, and

Question 11—What is meant by "timing creams"?

Question 12—What three important candy raw materials are the saps of trees?

Question 13—In what countries are the following seaports located, and name an important material shipped to us from each: Barcelona, Basra, Kobe?

Question 14—What is the first historical reference to the use of cocoa?

Question 15—What material used for wrapping candy boxes is made from the same basic material as artificial silk?

Question 16—What are "protective colloids"?

Question 17—Famous personages in the N. C. A.—who are they?—W. F. H., A. M. K., G. W., W. C. H.

Question 18—Of what special significance to the chocolate industry is "Pan American Co-operation"?

Question 19—What is the relative sweetening power of the various commercial sugars?

Question 20—What jelling agent present in natural fruit juices has recently become available to the confectioner in powdered form?

their Answers:

Answer 11—Controlling the inversion of fondant by the use of invertase.

Answer 12—Chicle, maple sugar and gum Arabic.

Answer 13—Barcelona, Spain—filberts; Basra, Mesopotamia—dates; Kobe, Japan—agar-agar.

Answer 14—The Aztec emperor, Montezuma, consumed 50 pitchers a day of "choclatl," a potation consisting of cocoa, flavored with vanilla and other spices. (Prescott's "Conquest of Mexico"—about 1519.)

Answer 15—"Cellophane."

Answer 16—Gelatinous substances, such as gums, gelatines, dextrins, etc., which, by their presence in solution, exert a protective action, preventing the crystallization of crystallizable substances.

Answer 17—Wm. F. Heide, Pres.; Adrian M. Kelly, Vice-Pres.; George Williamson, Vice-Pres.; Walter C. Hughes, Secretary.

Answer 18—Discriminating in favor of Bahia and other Pan-American cocoas would gradually tend to loosen the Combine's grip on the world cocoa market.

Answer 19—Cane, beet and maple sugars—100; corn sugar—67; corn syrup—26; honey and invert sugars—130; fruit sugar (levulose)—173.

Answer 20—Citrus pectin.

The Breath of Industry

(*Continued from page* 37)

that his manufacturing costs are lower, which gives him a further advantage of price appeal.

Air conditioning is sometimes looked upon in the light of great and mammoth equipment occupying large portions of the factory which takes up manufacturing space. It is also looked upon as very expensive, both in initial cost and operation. However, this is not the case, because by slight rearrangement in the department only small rooms are provided with the necessary control of temperature and humidity which brings the cost down to a figure that is often an agreeable surprise when complete surveys and prices are submitted for such installation.

Air conditioning, like an automobile, was at one time considered to be a luxury only enjoyed by the wealthy and great, but today it is in the same class with the automobile and is enjoyed by the humble and lowly.

Air conditioning is not a mystery. It is simply using nature's laws in a condensed form and has ceased to be a problem. It is a matter of good judgment in manufacture, or, to sum it up, it is simply the breath of industry.

U. S. Chamber of Commerce takes wallop at candy industry in article entitled

Candy—the Million Dollar Muddle

by William Boyd Craig

EDITOR'S NOTE

WHEN the poet Burns wrote his undying lines "O, wad some power the giftie gie us," he probably had in mind that some people are never given an opportunity to see how they look to others. But lest the candy industry grieve over a similar misfortune, here comes the United States Chamber of Commerce with a high-powered looking-glass.

Under the striking title above, there appears in the August issue of "Nation's Business," which is published by the Chamber of Commerce at Washington, an article by William Boyd Craig. We believe this article to be the most stinging and complete indictment of the industry and its methods which has ever been written from a disinterested source.

Much of it is based on facts with which we are all familiar—some of it a trifle overdrawn, perhaps—but conforming in the main to what the leaders of advanced thought in the industry have long been maintaining. The major portion of this article, as it so vitally affects the entire candy industry, is being reprinted herewith, and will be commented upon editorially in subsequent issues of The Manufacturing Confectioner.

HAVE the retail habits of candy sellers and buyers changed so greatly? Turning to the recent Baltimore Retail Census, I found this tabulation of retail outlets for candy, by name and number:

Auto Accessory	1
Bakeries	35
Candy and Confectionery	976
Cigar and Tobacco	147
Clothing and furnishing, Men's Ready-to-Wear	2
Coal, Wood and Ice	1
Dairy and Poultry Product	11
Department	9
Drug	194
Dry Goods and Notions	48
Fruit and Vegetable	21
Gasoline and Oil	1
General	6
Grocery and Delicatessen	1,185
Meat, Poultry and Fish	40
Musical Instruments and Sheet Music	1
Restaurants	53
Soft Drinks and Ice Cream	132
Stationery, Books, Magazines, etc.	4
Toys and Games	3
Motorcycles and Bicycles	1
Five and Ten Cent Stores	24
Total	2,895

In addition, there is the occasional candy selling of theater lobbies, school canteens, baseball parks, carnival nomadic concessionaires, and church festivals. Some cities would show book stores, hardware stores, and others carrying a line of confections. Railroads, stations, and now even some trolley cars handle candy. I know an insane man who has built up a considerable estate

Here is a dollar's worth of bar candy, selected by the boy in the picture. He purchased it at several sources, none of them "candy" stores. One piece he bought at a bookstore, another at a filling station. This is typical of one phase of candy's battle for retail outlets.

selling candy to his fellow patients at his institution.

Candy, it will be observed, is not overlooking any chances to increase consumption. It has made itself easy to find. By so doing, it contributes a good example of "merchandise seeking the man."

The 976 candy stores of Baltimore do a business of almost seven million dollars a year. The 1,914 other candy outlets add but a little more than a million dollars. The average candy dealer takes in about $7,000 a year—a small volume for a retail establishment.

Thus the straight candy retailer is the manufacturer's best market. Not all of them are high-class merchants. Only a few watch their costs intelligently. The very few who deserve the name of merchant do a great part of the retail business. Many retailers manufacture their own products, notably in the case of the Greek candy kitchens, of which there are 30,000 in the country. The average inventory of independent confectioneries for Baltimore is low, being less than four hundred dollars per store. Compared with the drug store, with its average inventory of over five thousand dollars, it may readily be seen that the confectionery business is a tempting field for the man with small capital who wants to be "in business for himself."

Study of retail surveys such as that in Baltimore will show the manufacturer where the consuming public buys most of its candy and which outlets are most ready for further development. Whether or not the middle men are doing a workmanlike job in supplying the retailers also may be read there.

Five and ten cent stores come second in the volume of business done in candy. While second in volume, they do only one-sixteenth as much as the candy stores themselves. Five and ten cent stores sell more candy than any other commodity except notions. Many of the specialty shops which carry candy use it as a weapon against competitors, rather than as a staple line in itself.

A grocer may carry candy as a means of retaliation against the delicatessen store nearby. He will go after the business of the whole family.

A far from obvious fact is that candy stores sell more tobacco than tobacco stores sell candy. Thus the brother act falls down.

It has been computed that half the candy sold in this country is sold in one, five and ten cent amounts, most of it to children. Four-fifths of what the manufacturers turn out brings to them a quarter or less per pound. Only 10 per cent of the present volume is accounted for by a higher priced variety which sells for a dollar upwards a pound.

Candy is now just about able to call itself a billion dollar industry. Huge as it is, all is not well with it. The confectionery trade papers talk of the distressing state of the business, and candy men are pessimistic. I wanted an authoritative expression on its state and trend, so I questioned a Department of Commerce official whose duties take him into contact with the country's leading manufacturers, jobbers and retailers.

"Where is the candy business going? It is going to hell; that's where it's going."

His answer has since been confirmed by several leading candy makers and distributors. Wanting to see if the state of the industry had not been exaggerated somewhat, I looked beyond the retailer.

The Rub of the Candy Business

What of the jobbers and wholesalers? To them is given much of the blame for the present peculiar state of the candy business. Standing midway between the manufacturer and the retailer, the jobber is the target for the slings and arrows of each, and let it be said that he receives them. Some of the charges against jobbers are that there are too many of them. Some, it is even said, do not know what it costs to do business.

Retailers contend that jobbers find credit for manufacturers too easy. This charge is freely passed among the jobbers themselves.

A truck is all the jobber needs to go into business. This makes easy for him price cutting and the other practices alleged to be unfair. Without a well-organized trade association, jobbers are in no position to fight back, or to clean house for themselves. They are probably as much hampered by the lack of nationally organized activity as any similar group in this country.

The candy jobber may find himself competing with wholesaler of hardware, drugs, notions—or what-not—in supplying what he has always looked on as "his" trade. Too often he will fight back with price-cutting alone, forgetting that he can usually give better service, quality and variety than his new competitor.

Industry Has Growing Pains

Considering next the manufacturers, many of them are found to be steeped in gloom. Equipped to produce more candy than the country can consume, they are busy doing just that. The industry has grown more in the last quarter century than in the century previous. It is in the position of an overgrown boy who does not know what to do with his strength and who is beginning to show the first signs of self-consciousness.

It is charged that there are too many little manufacturers, able to operate on small capital.

There is plenty of volume, but the profits are spread thin. It is likewise charged that unethical manufacturers exist who put more thought into the appearance and package of the product than to the quality of the materials.

A comparison of the manufacture and distribution of tobacco and candy is interesting. Tobacco shows about the same number of retail outlets, fewer retailers who sell nothing but tobacco, fewer jobbers, and fewer manufacturers. Yet the whole machinery of distribution is better organized and the fewer concerns engaged are showing better profits. This is largely due to the fact that three tobacco manufacturers control the great majority of the market. No candy manufacturer or group of them has been able to command anything like the secure position of the tobacco manufacturers. How many candy man-

ufacturers' names are known in all parts of the country? The case of chewing gum is much similar to tobacco. It, too, has three dominant manufacturers.

The Maelstrom of Manufacture

One Chicago manufacturer produces twelve hundred different pieces of candy, in his expensively equipped factory, where even the air is washed before it is admitted. He sells bar goods, fancy-packaged candy, penny goods, and deals in bulk lots shipped in pails. When it is remembered that there are three thousand candy manufacturers in the country with product value above $5,000 and each manufacturer putting out his own brands, some idea can be had of the staggering diversity of products offered to the public.

The growth of the bar and package goods selling at five and ten cents is chiefly a post-war development. To this is due much of the increase in production.

Some manufacturers have been accused of unfair practices in selling just before Christmas, in competing with their own jobbers and retailers, by sending out agents to take orders direct at factory prices. This, it may readily be seen, adds nothing to the seasonal feeling of charity on the part of the distributing family toward the maker of confections.

Rank Imitations

In any industry where overproduction is present fierce competition will ensue. It is there in the candy industry. This competition often takes the form of imitation.

A successful product will have literally hundreds of imitations put out, until its success is greatly diminished. One manufacturer decided to capitalize on this orgy of imitation by imitating his own ten-cent bar. He stated frankly on the wrapper that that was what he was doing.

Candy does not find its only competition inside its own field. It is beset by scores of other industries, each fighting for its share of the consumer's dollar. The idea that sentiment be expressed with flowers is a blow at high-priced packaged candy. The appeal to eat an apple every day likewise shifts the buying habit out of the hands of the confectioner. Packaged raisins and nuts are engaged in fighting for consumer's money in competition with candy.

The idea of giving jewelry, fountain pens and watches as graduation presents also has its effect, indirectly, of leaving the high-priced box of candy on the store shelf.

The young man who, had he been living twenty years ago, would have included a box of bonbons in his total for sentimental purposes, now expends that dollar for gasoline and takes his lady love for a spin under the stars. Thus it is not too long a stretch of the imagination to say that the gasoline station is an active competitor with its much older retail brother, the candy store.

Fighting for Nation's Change

The expression of sentiment by telegram is another slice out of money that might have gone for candy. Fancy silk lingerie, according to experts, is becoming more and more popular as a gift from the male young of the species to the objects of their affection. Oranges, ice cream and soft drinks have, of course, each entered the arena to fight for more and more of the country's small change.

The present fad in female figures hits directly at candy. The young lady who strives to keep her vertical lines nearly parallel will forego candy and desserts.

Instalment buying has had some effect upon the growing popularity of cheap candy. A man paying on a house and an automobile will not take home a box of candy for the week-end so readily as he would if he had finished payments. He may satisfy the desire for sweets on the part of his youngsters by supplying the funds for five or ten-cent bar or package goods. While the income of the average indivdiual for the country has increased since the war, there is a corresponding but much greater struggle on the part of commodities for a share in that income.

What Makes Candy Price?

One of the manufacturers' problems is to convince the public that there is not a direct connection between the price of sugar and the price of a pound of high quality candy. The industry does use around a million tons of sugar a year or, roughly, half the total volume of candy produced in a year. Still, one quality candy maker puts into each pound box of candy 76 items of supply.

A pound box of candy is probably one of the most international products which the world has ever known. Almost every climate, every soil in the world contributes something to a high-priced box of candy. A revolution may boost the price of Ecuador cacao or Mexican chicle.

A manufacturer of candies has one of the most complicated buying markets to watch with which any business is confronted. Violent fluctuations are the rule there. A Balkan disturbance will upset the source of figs and dates from Turkey, Greece, Persia, Arabia, Algiers and Morocco. Most of the egg albumin finds its way to American markets from China, lemon oil from Italy, Brazil nuts from Brazil, cherries from France, vanilla from the Reunion Islands. Few other industries are so closely connected with international trade.

"Millions for Defense"

The National Confectioners' Association has raised, by voluntary contributions from its members, over a million dollars for an advertising campaign. By this gesture it has served notice on its competitors that it is ready to declare war to win back its lost markets and to create new ones.

Its early advertising is of an educational nature, with an appeal to the public to make holidays pleasanter with candy. The industry is wisely trying to build sales for the periods that have in the past been dull times, namely, the late spring and summer months, and is making its

holiday appeal apply particularly to the warm weather holiday jaunts and picnics.

This brief summary of the sore spots on the body of the candy business will, of course, seem elemental to anyone actively engaged in the making or distributing of confections. It could be expanded almost indefinitely, to fit every locality, with its own peculiar conditions, but here let's turn to another side of the picture and show what some more forward looking in the business are doing to rectify trade evils and to produce profits where only volume grew before.

The manufacturer has the rather bright outlook before him of recalling that every man, woman and child in this country is spending just about $8 a year for candy. Stated another way, candy accounts for about 2 per cent of every dollar spent through retail channels throughout the country. The market is there, but the machinery of supplying that market still creaks in the joints.

There are a few outstanding figures in the candy business. Some hint that what it needs is a "czar" of the Judge Landis-Will Hays type.

The most active organizations in the whole field are the National Confectioners' Association and the New York Joint Candy Board. There is a plan on foot for the regulation and the control of trade relation in the industry through national and local joint boards cooperating with the Federal Trade Commission. It is an interesting and practical method for eliminating unfair competition and will bear watching.

There is in the industry a great need for standardization of trade practices. They are in such a muddle that relief will not come in a day.

If such activities do not bear immediate fruit it should be remembered that the candy industry has for some time carried several burdens in the form of practices which, though possibly not illegal, have been a heavy tax upon the whole body.

Maybe we are about to see another industry pull itself out of a hole by tugging at its own boot straps. Possibly, too, if it beats government to the task of regulating it, it may not be going to hell, as alleged.

This is what an outsider thinks of the candy business. Is he right? Have you an answer to his criticisms? The Chamber of Commerce of the United States has spoken. Now it is your turn. Let us have your reaction to this article!—Editor.

The small change these youngsters spend for popcorn might have gone for candy. Few commodities have as many competitors as candy.

Glass for Packing Hard Candy

(*Continued from page* 36)

reached the pressure on the surface of every globule of moisture is very great. In addition to its own weight and viscosity, the syrup is exposed to a surface pressure of air amounting to about 15 lbs. to the square inch. If we consider the exact balance which is reached between the pressure of the expanded moisture contained in the syrup, and the weight and viscosity of the syrup itself, it becomes quite clear that any reduction in air pressure will permit more moisture to escape and thus lower the moisture of the finished product. This is the special province of vacuum-cooking. The finest type of cooking unit so far available is one in which the batch is first cooked in the open air and then exposed to vacuum for finishing. The cook is rapid and the moisture extraction high. That 15-lb. air pressure is removed.

In time there will doubtless be a better outfit on the market, but that time has not yet arrived.

For continuous cooking of glucose-doctored batches there are other and more economical types of cookers, but the glucose-doctored batch is a subject in itself, and I will not attempt to discuss it here.

The final answer is, get the moisture as low as is humanly possible. Then, if you have any influence beyond that, by all means invoke it, for the lower the moisture the longer the goods will withstand the ravages of the air.

Water—What It Does to Hard Candy Batches

(*Continued from page* 33)

container as an advertisement for his brand;

(4) because glass is a natural heat insulator which protects its contents from atmospheric changes;

(5) because of the simplicity with which the air-tight closures can be made;

(6) because of its permanency and reuse value to the housewife; and

(7) because it is the most sanitary container known.

Walter De Bevcise Retires From Business

Walter W. De Bevoise, one of Brooklyn's leading candy manufacturers, is retiring from the business in which he has spent his entire business career. Starting thirty-eight years ago in a small plant in New York City, his business expanded to such an extent that he was forced in a few years to seek larger quarters. He realized the value of Brooklyn as a manufacturing center and built and equipped a modern four-story plant in Carlton avenue. Ten years later he added fifty more feet to this plant and in 1919 built a three-story garage and warehouse. Mr. De Bevoise attributes his success to his progressive methods and to his efficient selection of executives. To prove his faith in these men he gave them an opportunity to make a bid for his business. Accepting the offer, a few of the men with services ranging from twelve to thirty years formed a closed corporation and purchased the business. It is expected that these men will carry on the progressive policies formulated by Mr. De Bevoise.

William C. Kimberley, associated with Mr. De Bevoise for twenty-five years, is chairman of the board of directors of the New York Candy Club and active in civic affairs in Flatbush. He will be president of the Walter W. De Bevoise Companies, Inc.

J. Alfred Morris, also of Brooklyn, senior salesman and advertising manager, will be one of the directors and take up the duties of director of sales formerly held by Mr. Kimberley. Mr. Morris is well known to the trade in New York and Philadelphia and is a member of many business and fraternal organizations.

Two Long Island men will also be officers of the new corporation—Clarence A. De Bevoise, of Bellrose, vice president, and Henry S. Elsebough, of Jamaica, secretary and treasurer. Mr. Elsebough has been credit manager for Mr. De Bevoise for twenty-two years. He is an active worker in Masonic circles and a popular figure in the candy industry.—*Brooklyn Citizen.*

Noah W. Taussig, chairman of the board of the American Molasses Co. of New York and president of the Nulomoline Company, one of the most prominent men in the molasses and syrup industry in this country, died at his home, 190 Riverside Drive, New York City, on Saturday, July 9th, 1927. Mr. Taussig founded in 1883 the N. W. Taussig Company, which in 1905 was amalgamated with several other firms to form the American Molasses Co. of New York. He invented several processes for making special kinds of sugar.

In 1925 Mr. Taussig retired from the presidency of the American Molasses Co. of New York and was elected chairman of the board. His son, Charles W. Taussig, succeeded him in the presidency. He was also the founder and president of the Nulomoline Company from the time of its incorporation.

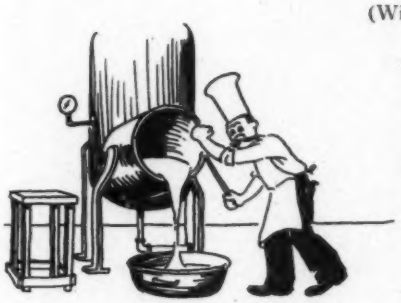
During the war Mr. Taussig acted as secretary of the Committee on Cane Syrup and Molasses under Food Administrator Herbert Hoover, and was also an active member of other important public committees. He was generous in his philanthropy, and during the war he arranged for the autographing of the first U. S. mail aeroplane stamp by President Wilson, and then later bought the stamp for $1,000, the proceeds being turned over to the American Red Cross.

Mr. Taussig was always keenly interested in the manufacture of candy. He had rare ability to judge flavor combinations. He often gave suggestions that would lead to improvement or development of new candy types.

WYMPUS' FIRST CANDY PRIMER

For Foremen, Superintendents and Candy Makers of Importance!

(With apologies to H. I. Phillips)



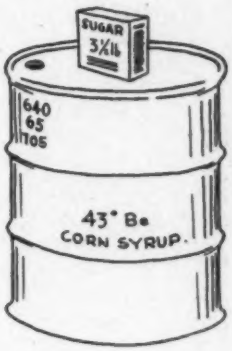
LESSON 1

This is Tony Van Dizzlem. Tony is foreman of the U. Skinnam and I Leatem hard candy department.

What is Tony about to do?
Tony is about to practice.

Practice what?
Practice new ways to make 15c sour balls taste like 60c.

Can he do it?
Why not?



LESSON 2

This is the sugar and glucose.

How much of each?
About fifty-fifty, 1 package of sugar to 1 barrel of glucose.

LESSON 3

What is this?
This is the essential oil, if you must know.

Is it essential?
We'll come to that later.

How much hard candy will it flavor?
About 1¼ lbs. under ordinary circumstances but approximately 12,367 lbs. a day the way Tony flavors.

LESSON 4

And what have we here?
This is acid.

What does Tony want with so much acid?
It makes the sour balls sourer.

LESSON 5

This is a small boy.

Why is the small boy crying?
He isn't crying. He has just eaten one of Tony's sour balls and he can't get his face back straight again.

LESSON 6

Luvvamud! Can this be Tony?
Yep, this is Tony's funeral.

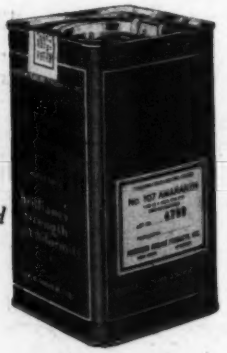
Why are they making such a fuss over him?
Just before he died he discovered that the tongue tastes what the eye sees and therefore colors like Raspberry Red, Orange I, and Lemon Yellow were sufficiently suggestive to warrant doing away with flavors altogether.

AMERICAN ANILINE PRODUCTS INC

AMERICAN
Certified Food Colors
for

Brilliancy
Solubility
Uniformity
Strength

So necessary for Candy Makers to secure those delicate candy shades in producing quality products.



Samples Gladly Submitted

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1818 So. Clark St. Chicago, Ill.
New York 45 E. 17th St. **Philadelphia** Pulletin Bldg. **Boston** 77 Bedford St.
F. B. Ludwig, 250 Ivy St., Atlanta, Ga.
Factory: Lock Haven, Pa.

40 Centuries in Quest of Hard Candies

(*Continued from page* 42)

evidently knew all about the current art of confection-making, although it is noticeable that he did not reveal all the details, perhaps for trade reasons.

Of sugar boiling, once termed "the mystery of confectionery," he says: "There are therefore to be known six ways of boiling sugar, that is, 'till it becomes smooth, pearled, blown, feathered, cracked and caramel." There you have, roughly, the degrees of sugar-boiling as commonly known to all succeeding generations of candy makers. The use of acids and oils to prevent graining of boiled sugar was also known.

Nott made a popular sugar candy, the mainstay for generations afterward, by boiling sugar to the "blown" degree and placing it in pots in which strings were hung. The syrup would "coagulate" around the strings in 14 or 15 days in the stove. But time was cheap in those days.

Barley sugar he strained through a "hair sieve." He gives recipes for making candied cinnamon sticks, boiled in syrup and covered with boiled sugar; also candied "gooseberries," barberries, quinces, pomegranates, peaches, oranges, pippins, cherries and other fruits. Candied flowers were popular with the ladies "gilliflowers" and orange flowers being prepared for their special delectation.

Nott also made candied nutmegs, which he set aside for three weeks, and notes that they were like Rock Candy, which is readily believable. He made chocolates and chocolate creams, too, and had a range of home-made flavorings from pungent musk, citron, cloves, cinnamons and ginger all the way down to orange and rose water, violets and cowslip blossoms.

And "Licker"—Perish the Thought!

He recommends dipping damson plums in warm brandy before candying—what temptations the old-time confectioners must have had to withstand!

Nott's chief equipment seems to have been a kettle, a spatule and a marble slab. Beyond a doubt his wares were fresh because they had no time to become stale—perhaps it was even a case, as Hamlet so aptly says, of "Sweets to the sweet—farewell!"

The absorbing and instructive story of the trials and tribulations of the candy-maker through the ages will be continued in next month's issue. Be on the lookout for it.

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